

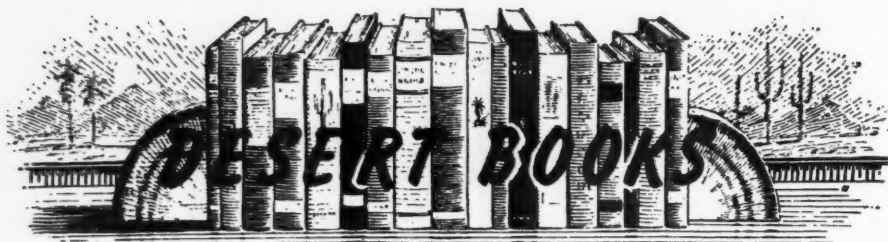
THE

Desert

M A G A Z I N E

DECEMBER, 1943

25 CENTS



BIOGRAPHY SAYS WEST STILL ROMANTIC BUT NOT SO WILD

The vast plains and rocky gorges of Colorado, Utah and Arizona long have furnished the setting for stories of heroic drama on the vanished American frontier. But to one man at least, the West of today is just as romantic and colorful—but not so wild—and the life of a cowboy still is as exciting as yesterday's. This man, David Lavender, in his informal biography, **ONE MAN'S WEST**, pictures with charm and humor a region where heroism and adventure are not things of the past.

Lavender, as a young man, set out to win a fortune in the gold mines of Ouray, Colorado. From that beginning the record of his travels and contacts with the West is long and varied. In telling the story of his life as miner, rancher, cowboy and wanderer, the authentic flavor of plains, mountains and desert permeates his tales of modern pioneers, tall stories and humorous anecdotes. Lavender brings vividly to life the outposts of America and proves that they have not been completely claimed from wilderness nor completely conquered by modern civilization.

Doubleday, Doran & Co., 1943. Line drawings. 298 pp. \$2.50.

—Aliton Marsh

MEXICAN MAID TELLS OF HISTORIC TUCSON

The reminiscences of Atanacia Santa Cruz, as told to Dr. Frank Lockwood, furnish many of the colorful and historic episodes related in **LIFE IN OLD TUCSON—1854 to 1864**, published in 1943 by Tucson Civic Committee.

Atanacia, a little Mexican maid, lived her whole life in Tucson, from 1840 until 1934. For Dr. Lockwood she recalled the exciting days following the Gadsden Purchase in 1854 and the "American occupation of Tucson" by the courageous pioneers who participated in the social and political development of the town.

Typical of these pioneers was Charles D. Poston, who, although a cosmopolitan figure identified with civic and social affairs in Washington, D. C. and the Orient, did much to further the civic interests of Arizona.

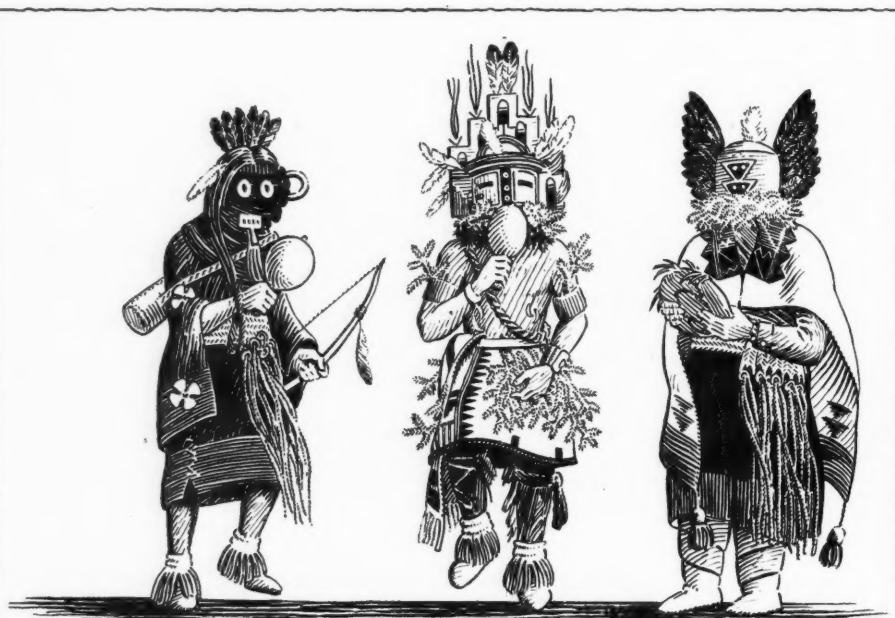
Poston arrived in Tucson in 1856 to organize an exploring and mining company. He stayed until the spring of 1861, at the opening of the Civil War when United States troops were ordered out of the territory. A period of lawlessness and terror,

during which many of his associates were robbed and murdered by Apaches and Mexican bandits, caused him to flee to the Pacific coast. From there he sailed to the Atlantic coast, spending the next year in Washington attempting to bring about the establishment of civil government in Ari-

zona. His mission was successful, the territory was organized and Poston was appointed Superintendent of Indian Affairs. He later became the first man to represent Arizona in Congress.

Samuel Hughes was another of the early arrivals in Tucson whose life was full of action and romance. It is said that "it was Hughes' distinction to be the first man who came to Tucson for his health." Five years after his arrival in 1858 he married Atanacia. He became one of Tucson's best known citizens, and did much to further civic interests such as churches, schools and fraternal organizations. Ward Ritchie Press, Los Angeles. 255 pp. 13 illus.

—Evonne Henderson



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DESERT CRAFTS SHOP

636 STATE STREET

EL CENTRO, CALIFORNIA

DESERT

Close-Ups

• On the back page of this issue of Desert is part of a story which began the weekend of December 7, 1941, up in the Sheep Hole mountains north of Salton Sea. Desert's Editor Randall Henderson, his daughter and son Evonne and Rand were hiking back to their car after an exploring trip with the Sierra club. Into the still atmosphere of the desert canyon a radio brought sudden strange words — "Hawaii and Philippines bombed!" . . . They drove away from the quietness and peace in silence. That evening Rand said, "I plan to enlist as soon as my place can be filled in the office." And now his sister Evonne carries on as circulation manager of Desert. And somewhere out there in the far Southwest Pacific Rand serves with the Marine Corps. On some of the quiet suspense-filled evenings he looks out the flaps of his tent at a moon which he knows is silvering the sand dunes and sifting a radiance on tall palms that move slightly in a whispering rustle above a dead campfire in a faraway desert to which he longs to return—as soon as "it is finished."

• After many months' work on a mining project in the war effort, John Hilton is back at his art and gem shop on Highway 99 a few miles south of Indio, California. John says he will start writing and painting again, spending part of his time and all of his gas to prospect for minerals needed by the government.

• Dorothy L. Pillsbury who this month tells about a Christmas she spent on Acoma mesa in New Mexico is a new contributor to Desert's pages, but she is known to readers of Christian Science Monitor, Coronet, Sea Magazine and many other publications. Most of her life has been spent in California, where she graduated from Pomona College. For 15 years she was a social worker in and around Los Angeles. Five years ago she went to New Mexico for a vacation, and like many other residents there, "just stayed." Now she has her own adobe house and her own wedge of adobe soil. Her special interest is in Indian and Spanish-American cultures of the Southwest, which she has studied in University of New Mexico, Old Mexico and Puerto Rico.

• Theron Marcos Trumbo who wrote the story of Guadalupe Day ceremony in this issue is another new contributor. Although he has been writing trade articles and poetry for 13 years he considers this his first "important sale." His ambition always has been to portray Indians and Mexicans in the Southwest both in articles and fiction. But until ill health brought him to New Mexico his environments in Kansas and Michigan afforded little opportunity to develop this interest. Now he has "dusted off the old dreams," and is writing and painting while paying the grocer and landlady out of a salary earned as statistician.



Volume 7

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The Desert Magazine is published monthly by the Desert Publishing Company, 636 State Street, El Centro, California. Entered as second class matter October 11, 1937, at the post office at El Centro, California, under the Act of March 3, 1879. Title registered No. 358865 in U. S. Patent Office, and contents copyrighted 1943 by the Desert Publishing Company. Permission to reproduce contents must be secured from the editor in writing.

RANDALL HENDERSON, Editor. LUCILE HARRIS, Associate Editor.
BESS STACY, Business Manager. — EVONNE HENDERSON, Circulation Manager.

Unsolicited manuscripts and photographs submitted cannot be returned or acknowledged unless full return postage is enclosed. Desert Magazine assumes no responsibility for damage or loss of manuscripts or photographs although due care will be exercised. Subscribers should send notice of change of address by the first of the month preceding issue. If address is uncertain by that date, notify circulation department to hold copies.

SUBSCRIPTION RATES

One year \$2.50 Two years \$4.50
Canadian subscriptions 25c extra, foreign 50c extra.

Subscriptions to Army personnel outside U.S.A. must be mailed in conformity with P.O.D. Order No. 19687.

Address correspondence to Desert Magazine, 636 State St., El Centro, California.



Monument Valley, Utah. Photo by G. E. Barrett.

DWELLERS IN THE SHADOWS

By EDYTHE HOPE GENEE
Hollywood, California

Grey shadows creep across the mountain-sweep
of rock and sand,
Encircling tiny dwellers close in their embrace;
Forever in the shadows, where no errant trace
Of sun can ever cross their path in all this lonely
land.

Tiny stem and flower, unknown to all but God
alone,
Patterned by the smoke tree's needled plume,
the white
Of sage protesting to the sun—only the shine
Of a million desert stars to beckon and to call
their own.

Burn, desert sun, down the highest mountain's
golden bars!
Blow, desert wind, across a lonely waiting
heart!
For we who dwell in shadows, know a counter-
part
Of sun and wind and beauty that transcends
the stars!

ARIZONA DUSK

By S/SGT. MARCUS Z. LYTLE
San Diego, California

Gloaming of purple simmers on the cliffs
Burnt to dead cinder like a Yaqui pyre;
On the bronze sky, Amole's darkened tooth,
Jagged and broken, chills the sun's low fire.

Here I would gather blue between new stars
Stabbing their javelins among hot cloud,
Gather before the cirrus cools to ash
Spun over summits where saguaros crowd.

Wind dry as cedar, thin as lonely space,
Unseal my ears that I may know each tone
Pressed from the lips of bending grama grass
Shadowed in moonrise on the desert stone.

NEW MEXICO MORNING

By JANE BLACKBURN
Santa Monica, California

I saddled old Feathers at the edge of the butte,
He shied at the saddle and kicked at my boot,
Reared when I touched him, snorted at the sand
—But I mounted him as gently as a top cow-
hand.

And I rode that pony to the crest of the hill,
Rode him alone when the wind cut chill,
Stayed with him proudly, held the reins high
—Alone on a hilltop, Feathers and I.

We started at the dawn and grinned at the
breeze,
I whistled a song to the cottonwood trees,
Brandished my hat at the whitening sky
—And we rode back in splendor, Feathers and I!

WHITE HOLLY

By MARY PERDEW
Santa Ana, California

White holly decks the canyons
When desert winds are chill.
Each spray is flecked with star dust
Upon its rock-strewn hill.

White holly wreaths at Christmas
Are misty moonlit grey.
They add a touch of magic
To that glad holiday.

But on the grim old desert
White holly is at home.
It shines in that weird setting
Like drifts of wind-tossed foam.

I'll decorate with pine tips
With cheery ribbon frills,
And leave the desert holly
To bloom upon the hills.

DESERT LONGINGS

By CORA C. WILLIAMS
Alamosa, Colorado

Mojave, I will come back to you some day
And in your arms forget I ever went away.
Forget I ever wandered from your desert wild,
A wayward and an oft rebellious child.
Oh, could I see the moon with silver spill
A flood of light that covers vale and hill,
Could I behold the Joshua trees so grey with
age

It would the longing of my soul assuage.
Mojave, I would lay my body on your breast.
Forget the weary war-torn years, and rest,
And live again those happy hours free.
I fear my heart would break with ecstasy!
Oh, desert old, so long the separation seems,
While I must find a solace in sweet dreams.

THE TALL WATCHERS

By LUELLA BENDER CARR
Proctor, Minnesota

The great saguaros wait with arms upraised
Here on a vast and cactus covered plain.
As if on guard, they seem to watch amazed
The traffic passing through their queer domain.
Two hundred years they've lived here . . . guard-
ed well

This hot and lonely Arizona land
While history unrolled. If they could tell
What thrilling tales we'd hear. How once a
band

Of Indians attacked white travelers
Enroute by covered wagon. Or they slew
Their own kind in sly raids. Saguaros were
On watch when tracks were laid . . . first trains
passed through.
With majesty the great saguaros stand
And guard eternally their sun-drenched land.

Desert Buttes

By LESLIE RODGER
Old Forge, New York

For ages now these ancient peaks
Have raised their crests against the sky;
Pensive, mute, in silent watch
They look across the burning sands
Where glimmering shadows fall and drift.
And note the slowly passing years—
Monarchs of a long lost past
And witness to the ages gone.

Now, like the holy priests of old,
With turbaned fog about their brow,
They stand to offer sacrifice
On unseen altars builded there.
How small our greatest efforts seem!
How slow our waiting, faltering steps,
As aeons of the years that were
Look down upon us standing there!

A pillar high of cloud by day
They stand to point forgotten paths;
While golden stars, a band by night,
Encircle wide each lofty brow.
Spread now thy healing lasting calm
Across each earnest upturned face,
And fill our yearning suppliant hearts
With thy serene abiding peace.

FEELING FOR BEAUTY

By T5 DALE E. WINN, U.S.A.
Australia

I ain't the guy what learned from books
What beauty is nor how it looks;
Me and artists ain't no kin at all,
My best writin's jest a scrawl;
But I got a feelin' I'd like to tell
If you hear me out for jest a spell—

It's a feelin' comes in the early dawn
When the day ain't come but the night is gone,
When the desert hills're black as night
But the sky beyond's all rosy bright,
And somethin' whispers, "The world's all
right."

It's a feelin' comes at the high of noon
When the heat swells up from the white sand
dune,
When the ridge is hard against the sky,
And the sun's white-hot where it burns on high,
And the air is parched and still and dry.

It's a feelin' comes with the settin' sun
When the shadows sprawl and the day is done,
When the gold you sought in the rocks all day
Spills over the hills in the sun's last ray,
And the wind goes mournful along its way.

It's a feelin' comes in the dead of night
When the fire dies down but the stars're bright,
When the tiny critters come out to prowl,
And a lone coyote gives a lonely howl
And you hear the cry of a huntin' owl.

I ain't the guy what learned from books
What beauty is nor how it looks;
But where other folks can paint or tell,
I got a feelin' that serves as well.

CREED OF THE DESERT

By JUNE LEMERT PAXTON
Yucca Valley, California

The desert moon is growing thin,
I see her eyes set deep;
Methinks she broods o'er a troubled
world,
And for our grief, may weep.



The Navajo singer, when asked where his ancestors had emerged from the Underworld to the Visible World, always would look into the north toward the blue haze that marked the southern Rockies, and answer evasively, "Maybe it's up there somewhere?"

Photo by Randall Henderson.

"The Gods Walked Up There"

"In the beginning there was nothing. There was no light, no vegetation, nor living thing . . ." Thus did the Mountain Chant Singer begin the story of Navajo creation. Reluctantly had he begun unfolding the sacred words—words which but a few of the oldest *hathli*, or singers now remember. The two men—one a member of the U. S. Indian Service at Fort Defiance, Arizona, and the other a grizzled Navajo chant singer, had been watching the last golden glints fade from the 14,000-foot peaks of the Sierra La Plata in southern Colorado. "The gods walked up there," the *hathli* had murmured. But not until four frosts had passed had the singer been ready to relate the story of his ancestors, from the time of Creation in the Underworld until the time of their Emergence at *Hadjina*, a sacred lake far up among the peaks on which they had gazed. Here is the story as it was told to Van Valkenburgh at the chanter's command to "Get your writing stick. Let's get the story of *Hadjina* down on paper. Make copies for my son, his sons, and then their sons."

By RICHARD VAN VALKENBURGH
Murals in tempera by the Navajo, Van Sinajinih

"**Y**E'II DINE'E BIKEGO! The gods walked up there!"

Dzilkedji bathli, the Mountain Chant Singer, murmured as he watched the shades of night blot out the last golden tints of sunset on the 14,000-foot peaks of the Sierra La Plata in southern Colorado.

"*La!* This is *Digin bitxa*, the old Holy Land of the Navajo. For it is up there—

deep in these northern sacred mountains of *Dibetsa*, the Mountain Sheep Range, that lies *Hadjina*, the Place of Emergence. In my youth I made a Pilgrimage up there with my kinsman *Babazhun* who was the greatest of all *bathli*."

Hadjina! The Nirvana of the Navajo. In all important rite-myths I had heard of this sacred place. But when I questioned

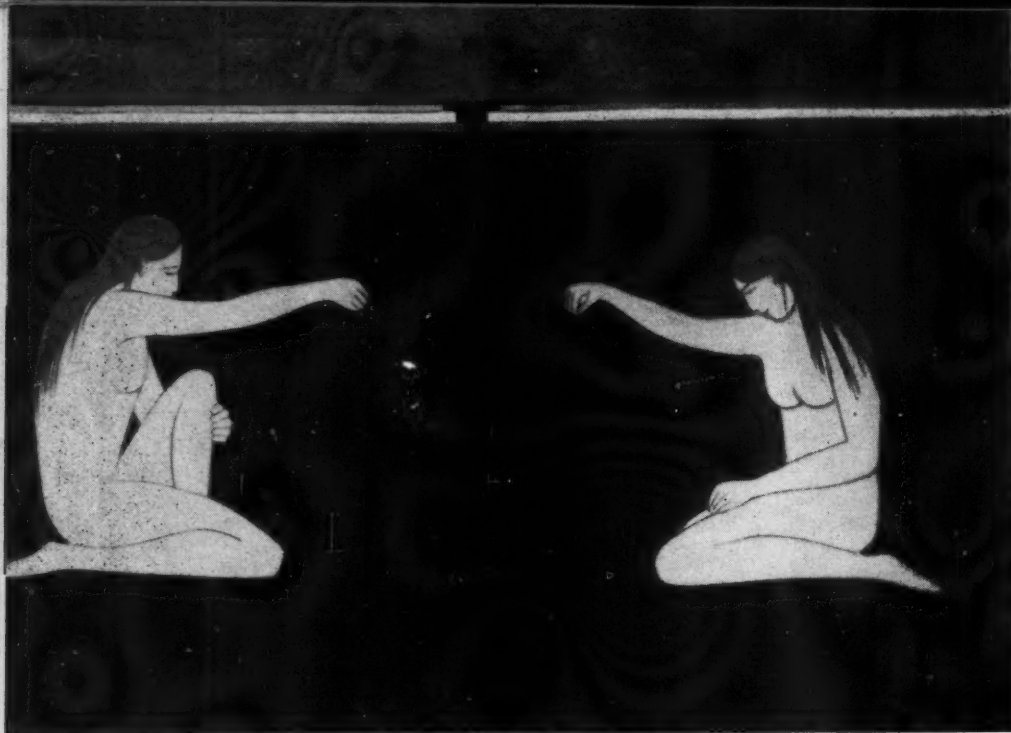
the *bathli*, they always looked into the north toward the blue haze that marked the southern Rockies as they answered, "Hola? Maybe it's up there somewhere?"

"What's it like up there, Grandfather?" I asked.

"It's right on top. Four peaks of the banded grey and tan of *badábo-náyet* (aragonite), the 'mirage stone' pierce the cloud layers to enter the upper heaven. Inside of these are four peaks the color of *tsélichii*, the garnet. In the center there is a lake of *dotlizhi* of deepest turquoise. And in the center of all there is a cone-shaped island of *bazhini*, or black jet.

"*La!* It was through this beautiful place that the *Digin dine'ê*, our divine ancestors came into this world. It was from here that everything started. All good and evil started up there. Today, few Navajo dare go to *Hadjina*. For the ancient talismen for protection against the Spirit People are known by only a few old men."

When on the next morning we reached Durango on the Rio de las Animas, I casually suggested that we turn north into the mountains on the Silverton road. *Dzilkedji bathli* smiled as he firmly objected, "*Dota!* Curious *Bilakana*. We won't go to



"In the beginning there was nothing. Only First Man and First Woman had life. In the Black Underworld they took earth and created Black Ant. Being the first human created he led the other people upward from darkness into light by prayer . . ."

Hadjina now. For that's what you're up to."

Noting my grouchy reaction he added, "It will be a long time before we can go up there—even talk any more about it. First, there will have to be four frosts. Then after the snakes, bears, lightning and whirlwinds have gone to sleep, I will tell you of the place where the gods walk."

I saw nothing of *Dzilkedji bathli* during the weeks that followed our return to Fort Defiance in Navajoland. The cottonwoods turned to yellow. Then the "small winds" rustled down *Tséhotso* and plucked away their leafy dress. One cold morning when Bonito creek turned from a gay little stream to a sluggish trickle, forcing her way through the ice cap edging out from the banks, the old *bathli* pitpatted into my study.

After *kowai* the old man spread his blanket on the cot that stood in the corner. When stretched out, his voice came from the darkness, "Get your 'writing stick.' Let's get the story of *Hadjina* down on paper. Make copies for my son, his sons, and then their sons!"

Thus *Dzilkedji bathli* told the story of Navajo creation:

"Djini. They told this.

"In the beginning there was nothing. There was no light, no vegetation, nor living thing. In the deep silence of Saadlhai,

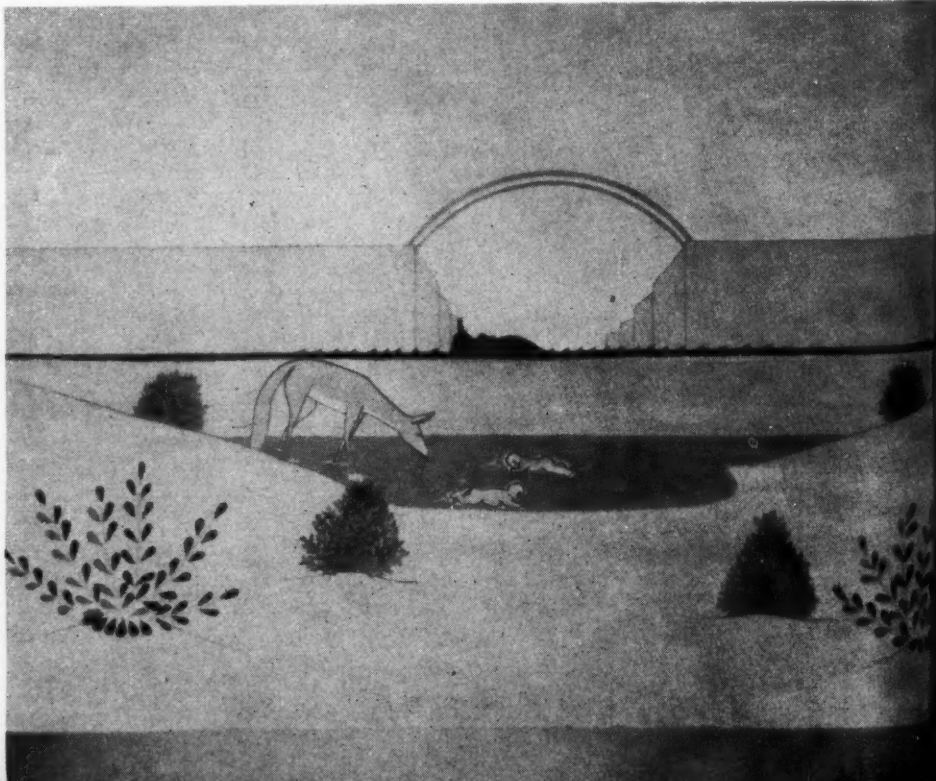
This episode depicts the prelude to the Navajo version of the Great Flood. The panel shows Coyote wading into Chabikeho, the Right-Whirling Pool, to steal the Water Babies. In the background the Water Monster watches.

the Black Underworld, all was void. Only *Atsé Hastin*, the First Man, and *Atsé Asdzaan*, the First Woman, had life.

"In this Black Underworld the First Ones toiled. With earth they created *Wolázhin*, the Black Ant. Alone he moved in the jetty darkness. In time he came to a pool of water just the size of his body. Swelling, it grew in size until it filled the vault.

"On the crest of the rising water *Wolázhin* was carried upward. Soon he touched the hard ceiling of the *dabunka* or vault.

"While snooping around, Coyote found the Water Babies of the Water Monster. His greed overcame his wisdom as he stole the babies, wrapping them in the rags of the Black God of Poverty and hiding them in the reeds. For this the Water Monster caused the world to be flooded . . ."



The beginning of Navajo creation, as conceived by the Navajo artist Van Sinajinih. This panel shows First Man and First Woman creating Black Ant in the Black Underworld. Above this world is the crust which separates it from the dim blue world that had the blue of "water before dawn."

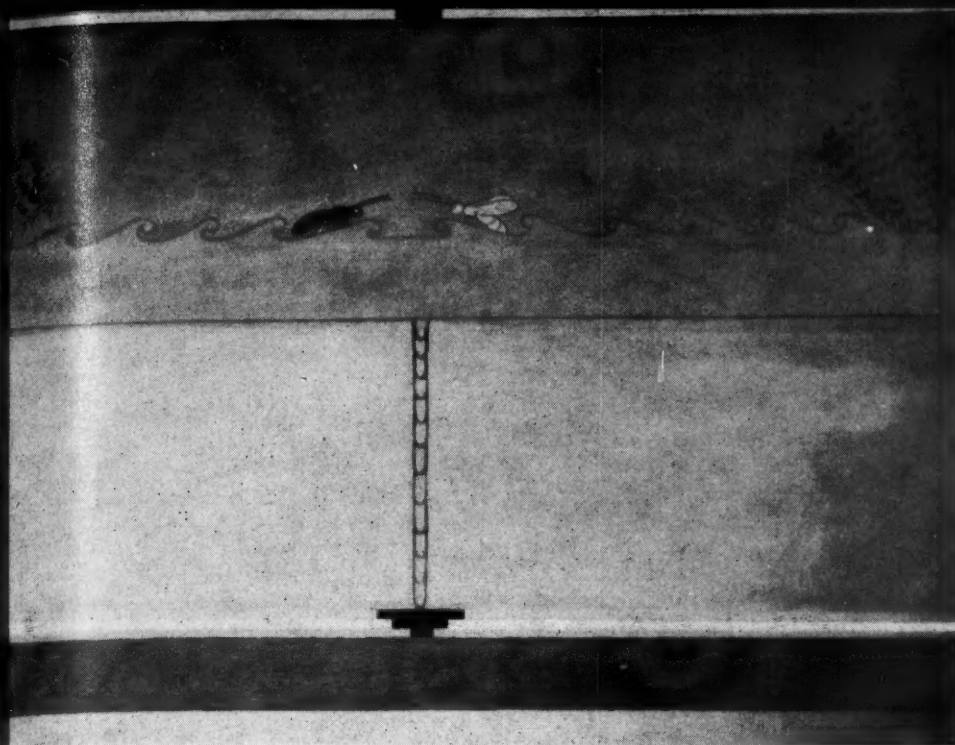
For twelve days he dug upward. Then he broke through into the dim light of *Saadnaki*, the Blue World that was the blue of water before dawn.

"In time he found *Woláchi*, the Red Ant. They called each other brother. Soon the flood reached them. Floating upward they reached the ceiling of the Blue World. For 12 days they took turns digging upward. On the last day they reached the dim light of *Saadtxa*, the Yellow World.

"In the dim light that was the yellow of twilight they saw other people. From the east a great river flowed through the center of the world to be swallowed in the Cave of the West. Towering above all were four sacred mountains that marked the outer edges of the world. Upon these dwelt *Hasjelte*, the Talking God, and *Hasjahogan*, the House God.

"Then First Man's voice filled the world, 'My children! Your mother made you all. We made the Ant people, the Locust People, the Snake People, the Yucca People, the Cacti People, the Fly People, the Spider People, *Nik'e'ni*, the Beautiful Owl, *Ma'idotlizh*, the Blue Fox, the birds, and all the beasts.'

"Then First Woman spoke, 'You were



"Black Ant, rising from the jet darkness of the Black Underworld, broke through to the dim light of the Blue World. There he found Red Ant. They called each other brother . . ."

created to populate the world that is coming. As you take human form, you shall gain reason and wisdom. By being our first born, *Wolázhin*, the Black Ant, shall lead you. He shall guide you upward from darkness into light by the word of prayer.

"Then the people built homes. *Wolázhin* built the hogan *dotozhi*, the peaked home. *Woláchi*, the Red Ant, built the hogan *dakabanzhi*, the rounded home. Today's hogan *alchi'desa'i*, the forked stick hogan, represents the first hogan built by *Wolázhin*. And our hogan *ya'dakabanzhi*, the rounded top hogan, was copied from that built by *Woláchi*.

"After this the gods began to make rules. First they taught the people how to live in a peaceful way. After this they taught them how to plant corn and other seeds that make food. After this they were shown how to play such games as bouncing sticks, dice, hoop and pole, and football.

"Soon the peace was broken. Wolf Woman made love to Mountain Lion. The people sought to settle this. Four hogans were built in the center of the world. Then Wolf, Mountain Lion, Coyote, and Badger were chosen to dwell in them. These were the first *natani* or headmen.

"These hogans were called *Nataa hogan*.

In this panel Van shows Wolf Woman, who became the first of the witches, leading the women back across the river to the men. In the crossing she and twelve of her followers are sucked down by the Water Monster and carried to his home in the Waters of the West.

In this panel the artist shows the meeting of Black Ant and Red Ant in the Blue Underworld. Below is the hole up through which Black Ant dug into the Blue Underworld from the Black Underworld.

For Coyote, Yellow Wisdom of the West
And for Badger, Black Wisdom of the North.

"Then the headmen carried their wisdom back to the people. For some time there was peace and happiness. To break this the headmen themselves killed sacred animals belonging to the gods. The holy ones were angered. For this was stealing. Nor had the people been taught in the ceremonial way to kill and skin animals.

"Then Coyote made love to Wolf Woman. But she said 'Dota! The gods made you headman. Now you try to break the law. When a headman does this, the people expect to do the same. Then everyone will get into trouble again!'

"Frisking around, Coyote answered, 'Why even today we headmen broke the law. We killed sacred deer and other animals. The gods did nothing. We broke one law. What's the difference if we break another—?'

"Coyote's smooth talk persuaded Wolf Woman. This was not hard to do. For she had no sense of family or clan. Even today there are women like her—they keep no law. They just hang around trading posts or run around camps making trouble between men and their wives.

"When this was discovered Wolf called a council. Angrily he accused Wolf Woman, 'You have been unfaithful again. If

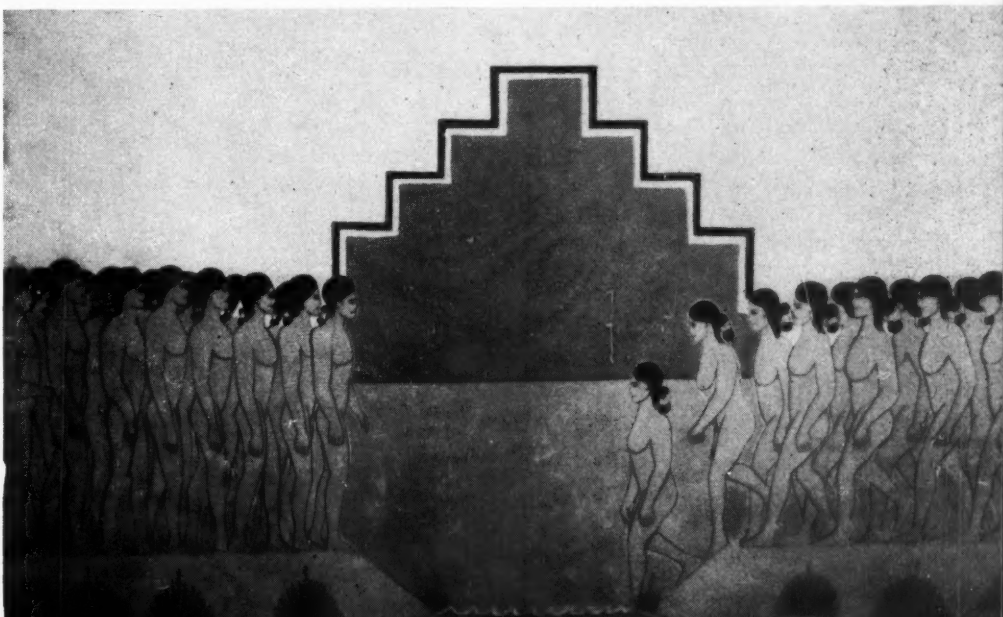
speaking-in-peace hogans. In them the people held their first council. After a long talk about Wolf Woman and Mountain Lion, they reached no agreement. It was then that they found they lacked wisdom. So they sent *Ma'ii*, the Coyote to First Man.

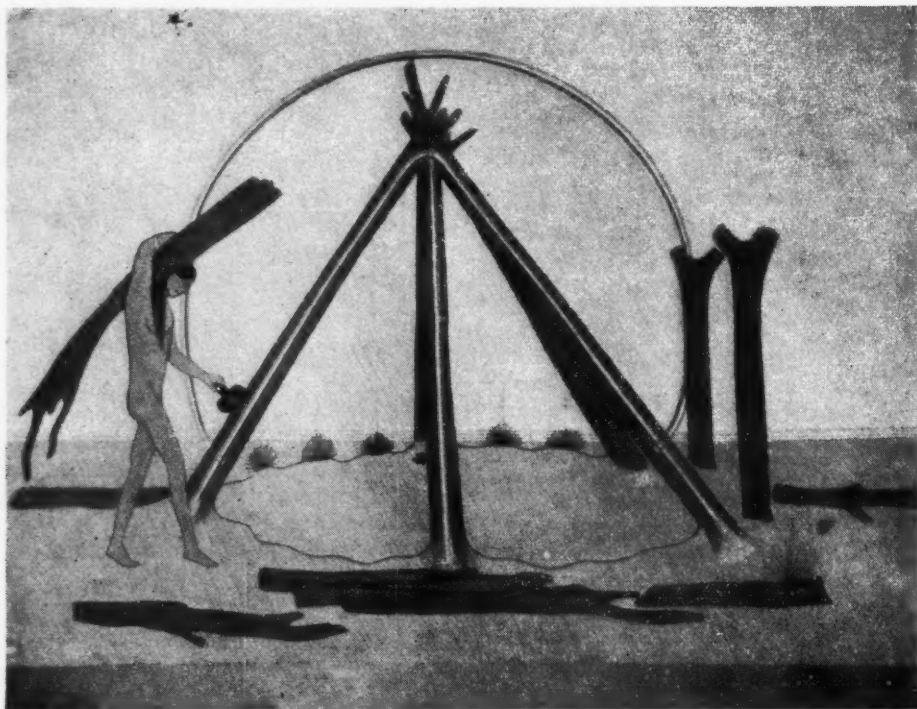
"*Ma'ii* came back with First Man's message, 'It's in your hands—in your minds. Find it there!'

"So the headmen went to Talking God who had wisdom. Taking earth from the sides of each of the four sacred mountains he laid it on their bodies as he prayed:

For Wolf, White Wisdom of the East,
For Mountain Lion, Blue Wisdom of the South,

"After four years of separation Wolf Woman leads the women back to the men . . ."





"To help the people First Man built the first hogan. Bending rainbows he formed the main beams. Under the east he placed white shell, under the south he laid down turquoise, in the west he placed abalone, and in the north he laid down jet . . ."

we all did this everyone would be mixed up. Again, you have broken the rules of the gods!"

"Wolf Woman growled, 'Why should women be faithful? Men are always running around. We do all the work. We can take better care of ourselves without you!'

"It was then decided that the men and women should separate. Wolf Woman led the women to dwell on the south side of the river. The men remained on the north side. Everyone agreed that this was wisdom. They would see who could be most successful—the men or the women.

"Both sides worked hard. While the men prospered the women suffered and knew privation. Four years passed. Finally Wolf Woman had to agree to return the women to the men. With 12 women she

In the lower vault is the Black Underworld. In the vault above is the Blue Underworld devoid of all things. Above is the Yellow Underworld with the four hogans of the first headmen. The stepped-up triangle leading to the roof of the vault to Hadjina, Place of Emergence, represents the mountains and the flutes through which the Navajo emerged. Across the top of this world is the streak of water which represents the flood. On top, and in the dim White World, sits Coyote. The artist has gone further than the story as told in this issue of DESERT in that he shows by the sun symbol and vegetation that the Visible White World has been created. This section of the Navajo Genesis will be told in a later issue.

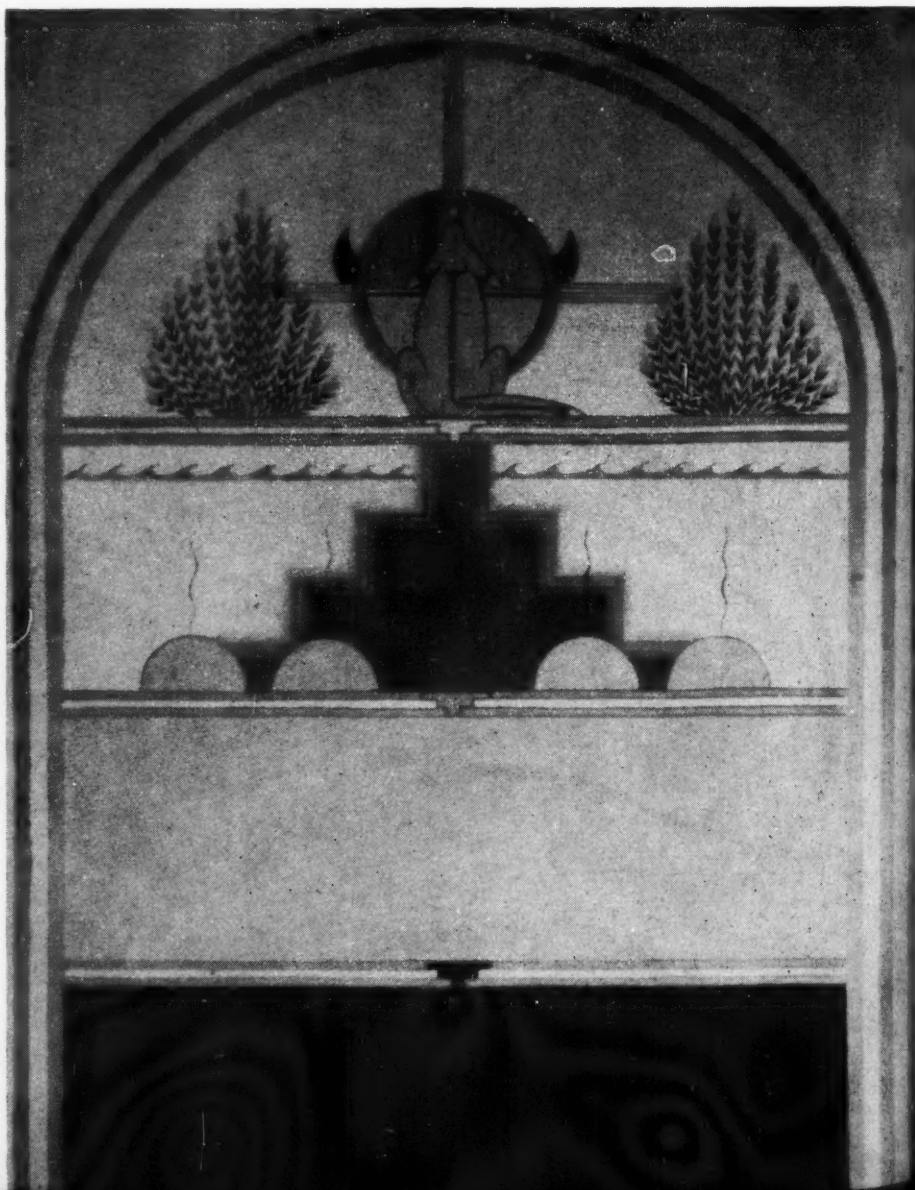
started to cross the river. When they reached the middle, *Ti'boltsodi*, the Water Monster, pulled them down.

"As they were carried into the Cave of the West, Wolf Woman called back, 'There will always be wrong. There will be death!'

"Happily the rest of the women safely returned to the men. Together husband and wife dwelt in hogans. With their children they kept the laws and lived in peace. To help them the gods sent the Flute Players. Some medicine men call them *adeschinish*, the Gourd Children. The divine sons of *A'ed Digin*, Holy Girl, they brought good to the people.

"In this time of peace the people learned many things. Labor was divided between the men and women. Purification was learned by the use of the *tache* or sweat-house. Herbs were found to be remedies for disease, poison and evil spirits. The first song-prayers and 'medicine' started at this time. And to keep the Navajo strong and healthy the clans were formed of unrelated people.

"Wolf Woman joined the family of *Ti'boltsodi*. With her evil ways she became the first witch and the Keeper of the Death



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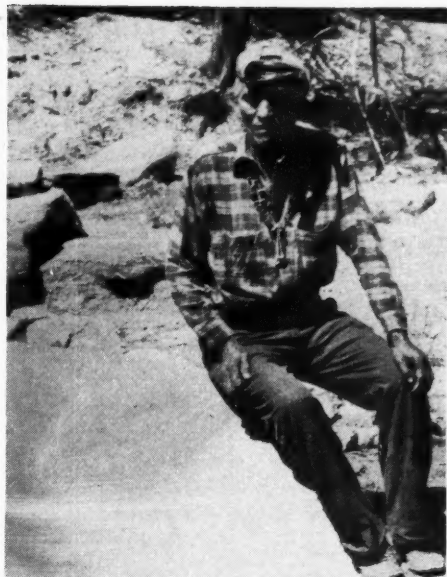
Vault. With this power she laid a trap for the people. Taking cuticle from her breasts she formed two perfect babies. Then she placed them in *Chabikeho* the first right-whirling pool.

While snooping around Coyote found the babies. Running back to camp he bragged of what he had found. The headmen warned him, 'Keep away from those babies.' But every day he sneaked away and coveted the babies. On the fourth day his greed overcame his wisdom. Wading into the pool he grabbed the babies. Wrapping them in the rags of *Hashkejinni*, the Black God of Poverty, he hid them in the reeds.

"On the next day a great silence filled the world. Frightened, the headmen hurried to *Chabikeho*. An angry foam swirled around the surging pool. On the second day whirlwinds howled overhead. On the sixth day sacred birds flew overhead and croaked, 'Beware!'

"From every direction great grey walls rose. Coyote was sent out to see what they were. Running back with his tail straight out he cried, 'It's a great wall of water moving in on us!' Then the headman went to see. Moving toward them was a great flood of water tipped with white foam!

"Everyone hurried to climb the sacred mountains. When they reached the top the water was right behind them. Hurrying



*Dzilkedjih Hatbli, the Medicine Man.
In time of the crusted snow he told
the story of Navajo Creation.
Photo by the author.*

they tried every kind of magic. The lizards tried, the squirrels tried, and the fowl tried, but the water still rose. Today, one can see the marks of the foam on the tail of *Tazhi*, the Turkey.

"Not wishing to have all his children drowned, First Man brought his magic. Slowly the mountains began to grow. From the peaks of the east and west there rose two great pillars of stone. With the people crowded on top they finally came to a stop in the yellow heavens.

"Then *Koz*, the Crane, dove to the base of the sacred mountains. Bringing up earth he laid down a pile on each pillar. Then the Gourd Children took their four-holed flutes. With prayer they placed them upright in the piles of sacred earth.

"By magic the people separated according to color. Those with light brown skins went into the flute of the east. Those with the dark brown skin entered the reed on the west. Then the reeds began to grow towards the ceiling of the Yellow World.

"For 12 days the reeds grew. On the last day they touched the ceiling of the world. Looking down the people saw that the water still was rising. Digging as fast as they could Badger and other burrowing animals dug upward. On the fourth day they dug through to a small island. In every direction endless waters covered the new world.

"In the pale light of *Saadeen*, the Dim White World, the people peeked out. Like a great black cloud *Chiztelki*, the Monster, came towards them. In his claws were two

Hadjina, Place of Emergence. Most holy of Navajo shrines, known by the white men as Island Lake, in the Ice Lake region high in La Plata mountains about eight miles west of Silverton, Colorado. So sacred that few Navajo ever have seen the place so often mentioned in their rite-myths. Photo by H. L. Standley, Colorado Springs, Colo.



magic killing arrows. *Woneschindi*, the Locust, went out to meet him. *Chiztelki* fletched his arrows.

"They glanced off Locust's unblinking eyes. Then *Chiztelki* challenged Locust to impale himself with arrows. Easily Locust did this. Then he ran them in from side to side. By this *Chiztelki* knew that Locust had greater power than he. Fleeing, he was never seen again. Thus Locust, who today shows the holes in his sides, won the right for the people to enter this world.

"Then the Insect People went out on the water and played. As they could not swim, the animals started to worry. Then they prayed. Finally, *Ganskidi*, the Water

Pourer, came to help. With his great horn he scooped out great furrows in the earth. Slowly the water drained off. Today, one can see these furrows at the Canyon de Chelly and other deep canyons in Navajoland.

"Then the Wind People brought warm winds to dry off the mud. Soon the people started to move southward. Those with the dark brown skins separated from them. In time they divided among themselves to build stone houses on the Rio Grande river and on the Moqui mesas. Today, we call these people the *Kinsani*, or Old House People.

"Coyote ran back to take one last look

at the hole from whence they emerged. Hurrying back he told the people that the flood still was following them. Then the headmen searched him for the babies. He did not have them. Then they searched everyone. Finally they came to Black God. Hidden in his rags were the babies!

"The voice of *Ti'boltsodi* rumbled from the hole, 'We punished you for stealing our babies. We caused the great flood that drove you from your home in the Underworld. For this—you shall always know fear. With good there shall always be evil!'

"The headmen hurried to lay the babies between the horns of the Monster. As he sank back downward he called, 'One woman has looked down this hole. She will never return to you. For she is dead! Never again look down into this place from whence you came into light from darkness. For—if you do, you shall return forever to the home of the Wolf Woman which is the Land of the Dead!'

"La! This is how we *Dine* came into this world through the hole we call *Hadjina*. What happened in this Visible World is another story. As I told you on the Rio de las Animas, in my youth I made my one and only trip to this most holy of Navajo shrines. For even today—the Gods walk up there!"

• • •

Dzilkedji bathli's story of Navajo origin brought considerable reflection. Where did the Navajo obtain their flood concept? Did this evolvement from darkness into light have some bearing on the original Navajo homeland in Asia? Was this an embellished and symbolic story of the long trek from the sunless tundras of Siberia to the sunlight home in the American Southwest?

Sometime later that winter I was reading my Denver Post. In the rotogravure section I came upon a striking scenic view captioned ISLAND LAKE, LA PLATA MOUNTAINS, SOUTHERN COLORADO. Nestling in the midst of four towering peaks there was a small lake. And in the center of the lake there was a conical islet!

Writing the photographer, H. L. Standley of Colorado Springs, I awaited his answer. It promptly came, "Island Lake is located some eight miles west of Silverton, Colorado. It is one of the several lakes in the Ice Lake region and is just south of U. S. Grant Peak in San Juan County—"

Anxiously I awaited the next visit of *Dzilkedji bathli*. In the time of the "eaglets" of *Bilakana* February, he came in. Taking the print sent me by Mr. Standley, I laid it before the old "singer." For a moment he dead-panned. Then looking at me with a smile, said, "You *Bilakana* have a magic way of finding out things. This is *Hadjina*!"

Desert Philosopher . . .

SOLILOQUIES OF A PROSPECTOR

Drawing by Frank Adams

Text by Dick Adams



"GOLDEN NUGGETS GLEAMING YELLOW
I FIND REMAINING IN THE PAN
PRECIOUS SHINING FRUITS OF LABOR
WHEN I'VE WASHED AWAY THE SAND . .

LIFE HAS BROUGHT ME MANY FRIENDSHIPS
BUT WHEN THE SANDS I TOOK FROM THESE
FEW REMAINED - BUT THOSE REMAINING
ARE GOLDEN IN MY MEMORIES "



"Four hundred feet straight up in front of us reared the cliffs of the rock of Acoma."
New Mexico State Tourist Bureau photo.

Christmas Trail to the Sky City

Trying to ascend Acoma by the rock trail had been Abigail's idea—and now she was spread out in that prehistoric chimney like a scientist's bug on a pin. She and Dorothy backed down, then again attacked the forbidding precipice of the Sky City—this time by the unromantic horse trail up which they ploughed knee-deep in sand. At the top a shawl-wrapped little girl materialized from behind an orange-colored butte. She was shy and a big front tooth was missing in her smile—but her message was open sesame to an Indian Christmas on the ancient rock of Acoma.

By DOROTHY L. PILLSBURY

"THIS is no place for two lone, middle-aged women," Abigail said, looking back wistfully at our decrepit *Fordcito* parked where the road ended in a welter of rocks. It was Christmas Day and we were alone on the New Mexican desert, 20 arroyo-dipping, dubious miles from the highway.

Four hundred feet straight up in front of us reared the beetling cliffs of the rock of Acoma. By tilting our necks back to the breaking point we could see the sun-glazed adobe houses where our Indian friends, Ana, Marta and Elena lived. We had visited them many times before, but this Christmas expedition was by very special invitation. "We'll be the only white folks there," worried Abigail. "Do you think we'll fit into an Indian Christmas?"

The wind was cat-calling across the barren sand-drifted wasteland. Clouds scudding over the bright blue New Mexican sky kept blotting out the sun. The shifting cloud shadows and the sand in the air made everything look out of proportion and unreal.

"Let's not go up the way we always do, by the sand trail," rebelled Abigail, overcome by the unusualness of the occasion.

"I've always wanted to try the rock trail. It's the one the Acomans use. If Ana, Marta and Elena can prance up it with a baby on the back and a water olla on the head, we should be able to crawl it."

Climbing the rock trail was like scaling a 400-foot chimney flue. It was a crevice in the solid rock with toe and handholds worn slick and smooth by hundreds of years of Indian coming and going. I had my doubts, but Abigail started out like a rocket. "Remember your vertigo," I warned, but my voice was lost in the gibbering of the wind.

As my feet felt for hollowed out foot-holds, I thought of the other feet which had done the same thing—Spanish conquistadores, brown-robed Franciscans and marauding Apaches. On top of the rock, the Acomans 400 years ago had crouched and watched crested Coronado pass close by in his search for the seven golden cities of Cibola.

Then I heard a scream. It was Abigail. "I'm stuck," she cried above the howling of the wind. "I can't go ahead and I can't back down."

There she was in her expensive tweed walking skirt, smart sweater and Knox hat,

spread out in that pre-historic chimney like a scientist's bug on a pin. By ordering her to shut her eyes and by guiding first one foot and then the other by main force, I finally managed to get her backed down where we started from.

Defeated in a romantic approach to the Sky City, we ploughed knee deep in sand up the old familiar horse trail. Almost at the very top, a shawl-wrapped little girl materialized like a ghost from behind an orange-colored butte. She was shy and a big front tooth was missing in her smile, but we gathered we were to go first to Ana's house. That was bad because Ana lived in a skyey penthouse three stories up from bedrock. We always had done our visiting in Marta's lower stratum home.

Down the uneven rocky street, between the tiered Indian apartment houses we went with the wind trying to use us for kites. Little boys popped out of ancient doorways to follow us as if we were some kind of Christmas Pied Pipers. Mangey dogs followed the little boys. A lop-eared *burrito* joined the procession and a vicious looking billy goat brought up the rear.

The houses set in long rows like giants' steps. The roofs of the lower stories were used for the porches of the second and the roofs of the second for the porches of the third. A rough ladder led from the ground to the second layer of houses, and narrow far-apart steps cut in the adobe led from the second to the third. Ana, swathed to the eyebrows in a scarlet and orange shawl smiled at us from the third story doorway.

"Maybe," I hissed to Abigail, "you can make it going up if you take it fast, but



Rough ladders lead from the ground to second story. N. M. Tourist Bureau photo.



... Homy sights and sounds. New Mexico Tourist Bureau photo.

how will you ever get down? Remember your vertigo!"

"I won't," she croaked in sheer desperation, sailing up the rickety ladder. "I'll have to spend the rest of my life up there—join the pueblo, I guess."

Ana's brilliant shawl almost covered her Hollywood style near-silk dress. For comfort's sake she was wearing her white buckskin *botas* which made her feet look the size of a doll's. She had decorated herself like a walking Christmas tree with all her

jewelry. There were a dozen bracelets of heavy hand-wrought silver set with turquoise, a silver rosary of big hollow beads with an enormous turquoise cross, strings of coral and old wampum, earrings of turquoise beads strung in a loop and many silver rings piled to the first joint of her small brown fingers.

Ana's ancient penthouse, like herself, showed the encroachment of modern America. In place of the tiny adobe fireplace was an old-fashioned iron cook stove. In place of the pile of sheepskins and *mantas* on the floor were hideous brass beds. In place of the family *tinajas* for communal mealtimes on the floor, were tables with oil cloth tops. There was even an 1880 sewing machine.

Despite modern inventions, the place had an atmosphere of old forgotten days. It was in the strands of scarlet chile hanging from the age-blackened *vigas* against whitewashed walls. It was in the pungent smell of burning pinyon wood. It was in the fragrance of fresh crisp bread still warm from the outside *estufa*. It was in the wafer-thin ceremonial *piki* made from the sacred blue corn.

"We go now to Marta's house," Ana directed. "Marta she have surprise for you."

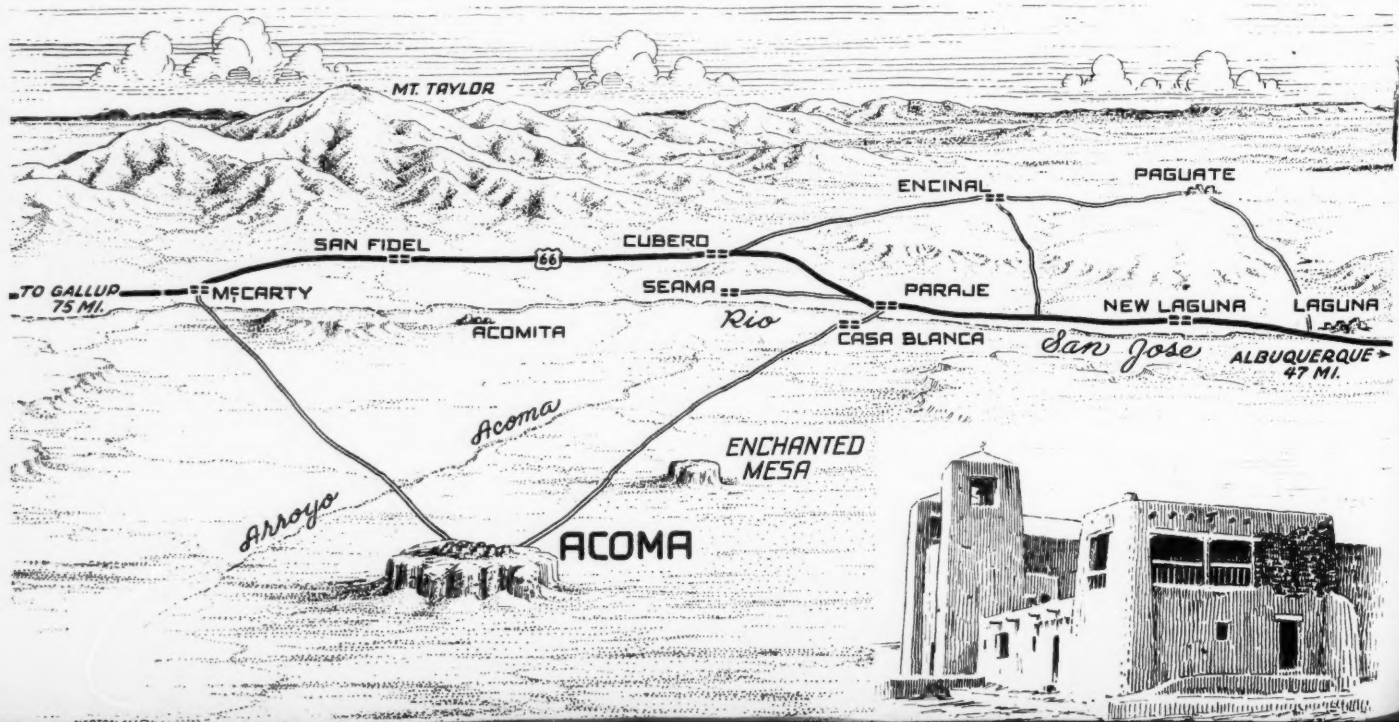
Marta did have a surprise for us. It was a baby—the loveliest baby I ever had seen. Its skin was golden biscuit color and its amazing shock of long black hair was like a little black rabbit's. She was on a cradle board, but the board was soft with a modern pillow.

"What are you going to call her?" asked Abigail.

"What you think good name?" questioned Marta, ignoring the breach in Indian etiquette by our inquiring into names.

"Rosemary," answered Abigail. "Rose because she is one, and Mary for Christmas."

There were nods and smiles of approval. "You Catholic?" asked Marta. We had to say no and to this day we grieve over the



thought that we might have been god-mothers to an Indian baby on the rock of Acoma.

All the time we were talking there had come to our ears the weird, rhythmic, incessant beat of the *tombe* from the sacred kiva. Ana and Elena hurried away to don their ceremonial clothes. Marta wrapped herself and Rosemary in a gorgeous shawl and led the way to the church.

What a place it was for a Christmas celebration! Its 10-foot thick walls dating from 1700, soared 60 feet above us. Ceiling *vigas* 40 feet long and 14 inches through supported the roof. Between the *vigas* were yucca stalks colored blue and red and yellow laid in herringbone pattern. The few backless benches had been pushed against the wall. The altar was dark and lifeless.

The wail of the *tombe* came nearer. The dancers filed in two by two. We hardly recognized Ana and Elena with the bright crimson circles painted on their cheeks. They made a kaleidoscope of color in their native ceremonial clothing—short fringed skirts, gay back kerchiefs, gorgeous calico sleeves, snowy boots and a profusion of barbaric jewelry.

The dance gained in tempo to the rhythm of the drums, the rattle gourds and the resonant chant of a letter-perfect chorus. The men did most of the dancing. The women simply kept the rhythm with their feet and went through intricate motions with their hands and arms. Each hand held a sprig of evergreen. Each motion, each gesture had a deep religious significance.

Perched up under the sky on the rock of Acoma, we felt we no longer were in the United States of America. We were in the Orient. We were in Burma. Hour after hour of the pom-pom of the drums and the never ceasing pat-pat of precise feet gave the peculiar sensation that the whole 70 acres of rock-ballasted Acoma was swaying like a gently moving hammock. I kept a firm hold on Abigail's sleeve. There were times when I felt she was about to take off and join the ceremonial.

Shadows filled the dim old church. Candles made pin pricks of light in dark corners. The pagan celebration of Christmas stopped. The Christian began and that without benefit of clergy.

In little groups, the Indians of Acoma walked to the altar and knelt before a manger scene they had erected. Old white haired grandfathers and stiff-legged children and gorgeous-shawled women crowded the altar steps. In a growing heap they left their gifts for the Child. There were vases and bowls and ollas made by their own skillful hands. There were ears of blue and purple corn and strings of scarlet chile and little golden squashes. There were cans of milk and boxes of soda crackers.

On each side of the altar stood an In-



Abigail almost joined the pueblo of Acoma. Susan E. Dorr photo.

dian boy perhaps 14 or 15 years old. They were dressed in the blue overalls, stout clumsy shoes and gay woolen shirts of modern Western America. Despite their clothes, they were First American in expression and bearing. Each boy had in his hands a long rifle of Civil War vintage. They were there to protect the Child.

Ana, Marta and Elena walked to the edge of the Rock with us. Where the horse trail dips down to the valley below, they stopped. From under their shawls they

brought out their beautiful handmade pottery.

"This is for you," said Ana.

"This is for you," said Marta.

"This is for you," said Elena.

Down the long trail we went laden with gifts. Burros lost under loads of pinyon wood passed us. Belated stragglers, returning to the old home Rock, stopped their horses to adjust a baby or two on the saddle or to retie a yawning bundle.

"Buenas noches. Feliz Navidad."

The women kept the rhythm with their feet and went through intricate motions with their hands and arms. Each hand held a sprig of evergreen.

Museum of New Mexico photo.





Adobe

Start your desert home now! Not literally, but start planning and dreaming it. Make your sketches, clip everything you see that looks good, pencil notations as ideas come—pool them in a box or notebook. This collection will be the groundwork for your ultimate building plans. From them the architect can turn out a home vibrant with you, a home ideal for your own pattern of living . . . This is the advice of the Oren Arnolds, who followed their own advice when they created their Casa Ventura in Phoenix, Arizona. Here is the story of how they built their home without benefit of contractor, conventional materials or labor.

By ADELE and OREN ARNOLD

A HOME in the desert country? We yearned for it, over the years; we needed it more and more. But apparently we just never would get rich.

Today we have one, with a great deal of beauty, a surprising amount of room, and a delightful all-around livability, for we have given it a 10-months test. Authorities tell us it is one of the finest adaptations of pueblo architecture in the Southwest. And we used very little money. It cost about half what people estimate, and it has nothing that you can't equal or improve on when you start to build.

Pearl Harbor still was an impossibility when we decided to let the contract. We actually signed in February, 1942—and then began a struggle. The contractor died, materials were frozen and labor evaporated. Upshot was that the Arnolds did a large part of the building with their own hands, or by directing whatever high school boys and aged Mexicans they could lure to the site. In the end, this personal touch added infinite charm to the dwelling, so much so that we recommend it no matter what conditions you may encounter.

Today our "Casa Ventura" stands as a striking handmade dwelling, finished without the expense of custom built houses and without the freakishness that untutored

Adobe brick came from the desert soil, massive beams were cut from native Arizona pines, flat rocks of the desert made flagstone floors. Indians mixed straw and mud with their bare feet to make the adobe bricks—which then were laid by the slow and careful hands of Mexicans.

Home

hands sometimes allow. The bricks are of adobe, made by Indians who mixed straw and mud with their bare feet, laid by Mexicans who were similarly close to nature in all its literal and sentimental meanings.

The vigas (pole beams) are pine trees from the forests that edge our desert lands. Flat desert rocks make beautiful flagstone floors. The design is Indian pueblo, the most truly American architecture on this continent.

We chose the adobe pueblo not just because it is American and highly practical, but because it is closest by heritage to the desert region. Why do otherwise normal people come out here and erect a plantation house from deep Mississippi, or an English cottage, or an atrocity from Cape Cod? Why not, as well, adorn our desert with a Chinese pagoda or a graceful igloo!

We believe that only the pueblo, the Spanish, the rancho, or some combination of these architectural styles, ought to be permitted in the Southwestern country. To a large degree California and New Mexico have demonstrated the common sense of this, and Arizona gradually is coming to it. Those three styles offer infinite latitude in convenience and adaptability, and by far the greatest beauty potential the world has ever known.

Our humble example offers — as you approach it — the usual flat roofed effect, with rooms that are squarish or rectangular and stacked with pleasing setbacks and offsets. They are instantly softened by "bull-nosed" or rounded corners, and straight lines were deliberately plastered so as not to be too straight. Thus is severity avoided, and a softer more inviting picture achieved.

A 36-foot Hopi ladder (made of tamarisk limbs and baling wire) leans against the front entrance hallway, like those kiva ladders you see in old Oraibi or in Taos. A huge red olla is on one skyline corner, and another hangs with real drinking water in the rear.

False vigas are six to eight inches in diameter and protrude with only reasonable uniformity as to slant, length and chopped ends. We felt that the perfectly

Indian women made the curtains, the rugs, some of the upholstery. Ranchers and cowboys and artist friends made their contributions to the adornment and construction of the Arnold home. Decorative designs—thunder bird, sun god, cattle brands—are part of the desert's heritage.





All beds are handmade by the Arnold family. Judy, the 15-year-old, made her bed of four planks and short 2x4 blocks on rollers, then finger painted it in Spanish roses to match her dressing table and drapes. Eight-year-old Rosemary can reach her double-deck Monterrey bed by a Hopi style ladder.



sawed ones were too artificial. Also this larger size gives an effect of massiveness and strength. Real vigas, inside as exposed ceiling beams, do not come all the way through the walls, because this is unsound construction—it permits water to seep in and crack plaster or melt adobe walls. Short false vigas outside seal perfectly and look no different.

Outside walls of our place are plastered in adobe tint only, not the full chocolate brown. But that is a matter of personal choice. Inside, the wall tint varies from a pinkish adobe (beautiful) in living and dining room, through pastel blues, ivory and green in the bedrooms.

The charm of these inside walls is in the finish. There is no plaster. The bare adobe was simply rubbed smooth, painted with skim milk for hardening, then painted with color as desired. This gives a fine character to the walls, and is F.H.A. approved. Each main room except the living room has one knotty pine wall, finished natural, to lend variety with a novel touch, also to gain a bit more floor space.

Floors are of turquoise cement, red cement, or flagstones in green. Floor plan as a whole becomes a Spanish design, around a patio, with a total of about 2,000 square feet. Indian fireplaces, picturesque and economical to operate, adorn the living room, dining room and master bedroom. Heating is from a central hot air furnace, and there is a 2500-cubic-foot cooler for each wing of the house, on the roof.

In the furnishings, however, came much of the skill and imagination. This was supplied partly by ourselves and partly by ranch folk, Indians, Mexicans, friends. Living room drapes are Indian Thunderbird and Sun God designs, cross-stitched in gorgeous colors on heavy monk's cloth by a Hopi woman named Katchin Vencie. Adele adapted that same technique for the dining room, to make beautiful curtains of cows' heads and cattle brands. Spanish motif holds for the bedroom curtains, except one that is of cattle brands to match the bedspreads.

We went all-out cowboy in the dining room, because all of our income is from writing and much of it is about ranch life. Roby Goff, a ranch friend who also is skilled at metal craft, made a wonderful chandelier of five real branding irons. Hand tooled leather adorns the rancho table and chairs, hand made. Large sepia

photographs, all of salon quality 11x14 in size, form a panel in the knotty pine wall of the dining room, and all are of ranch action and scenes. A chart of 1,000 typical regional brands and an oil painting of wild mustangs complete the wall hangings.

Throughout the house, chandeliers are hand made. Mostly they are wrought iron lanterns. One is a 20-point star, Mexican tin and glass. One is a Pima bread basket turned upside down for a reflector. All switch plates, too, are hand made, of sheet iron in Indian designs. All doors carry wrought iron hinges and thumb latches or ranch latches with rawhide draw strings. The front door bell was once worn by a cow, porch stools once were saguaro cactus on the desert, wood boxes are nail kegs painted colorfully in Indian or cattle brand



Oren is a prolific Western writer. Little wonder they went all-out cowboy in their dining room.

designs, and paper baskets are decorated boxes made by the Arnold children from builder's scrap.

All beds are hand made, by the Arnold family. In Rosemary's (the eight year old's) room are double-deck beds that can become twins. They are of "two-by-heavies" for massive looks and strength, and are given antique Monterrey finish. End boards of one show cutouts of nearby Superstition mountain, and the other shows Camelback mountain. A Hopi style ladder leads a child to the upper bunk. Two large drawers for storage are under the lower bed.

Judy, the 15-year-old, made her bed of four planks and short 2 x 4 blocks on rollers, and finger painted it in Spanish roses to match her dressing table and drapes. Plasterer's wire net she cut into a fan shape, as a place for souvenirs on her wall. Enlarged photos of high school youths on the desert make wall pictures.

Parents' bedroom has the Indian fireplace, and becomes a secondary living room when "high school" is dancing or

making whoopee in the big 17 x 25 living room. Here, temporarily, is the bed for baby Gail, age 2, but she will move in soon with Rosemary. Double bed here was made of pine planks and strap iron, antiqued, Spanish style.

Several chairs were made of cactus and tooled leather. (The Arnolds were taught leather tooling by a cowboy, can be easily learned from books.) Rugs are all Indian made—Navajo. So are some of the wall hangings. One large colored map shows all important routes of the early Spanish conquistadores in this region—and one other delightful map shows a "New Yorker's Idea of the United States."

This latter, you can well imagine, is good for an hour of laughter, particularly in what it does to the desert zone. Distinguished Arizona artists are represented in other wall hangings, most of them gifts of friendship and love. This latter item must not be overlooked in your house planning. If you have not lived long enough or fully enough to have talented friends who love you at least a little, then you are not ready to build.

Beyond that, our home has a growing assortment of "miscellany." A section of petrified log, with a knot showing. A floor lamp made from a breechloader rifle of 1866, found beside a soldier's skeleton in the Estrella mountains. A cavalry bridle from Geronimo's day. Two Indian death hammers. A mountain lion's skin. Serapes and pillows and oddments of western travels de luxe ad lib—all of which we have shunted to the big patio screened porch as our "museum" or rumpus room, which has become our favorite living quarters in spring and fall. We take siestas there on a painted-over wicker couch. We enjoy the radio on the table there. We dine informally at the kitchen end, which becomes a delightful breakfast nook, outdoorsy and colorful and cool.

We have but one more word of advice: start your desert home now.

Not, perhaps, with literal building, but with thinking, planning, getting ready! Ours we would change hardly at all, which is remarkable. This is because we planned it and dreamed it and almost lived it for years before a single adobe brick was laid.

Make your sketches, clip everything you see that seems good, make a thousand or more penciled notes of ideas. Pool all these in a box, as we did. Lean on them as you sketch your ultimate building plans, and your architect can turn out a marvel—not a bookish or conventional design but a thing vibrant with you and your individuality, a place ideal for your particular purpose and pattern of living, a home to delight you all the years.

Adele's creative ability adapted the atmosphere of cattle ranches to the design of her curtains.



Oren says, "Only the pueblo, the Spanish, the rancho, or some combination of these styles, ought to be permitted in the Southwestern country."



For 363 days of the year the village of Tortugas in southern New Mexico is a dreamy lazy little Spanish-American community—a few dozen humble adobe huts like a brood of yellow chicks gathered in the protection of the grey walls of the mother-church. But here, two days of the year, are brought to light age-old secrets of its people. To the thunder of ancient tom-toms they move in the pattern of intricate dances, punctuated with the rhythm of old chants. And through the years, as Spanish, Mexican and American each have exerted their influences, a strange blending of pagan and Christian rites may be seen in the Guadalupe Day ceremony.

Fiesta in Tortugas

By THERON MARCOS TRUMBO
Photos by Rives Studio, Las Cruces

"OUR VIRGIN GUADALUPE sometimes she gets angry with us when we do not do as she wishes!" Margaret's laughing brown eyes suddenly turned sober as if clouds hid the sunshine within. "Once a woman she promised the Virgin she would dance on Guadalupe Day, but she was ashamed to be seen by the people. She didn't come to practice most of the time and said she couldn't remember the steps. She didn't come to the dances on Guadalupe Day and our Virgin she was very angry with her. Soon afterward the woman got sick in her legs and she couldn't walk any more."

It was December 11, very early in the morning. The ancient adobe Pueblo House of Tortugas was dimly lit by ruddy gleams from the fires in the yard about which hovered the dark shadows of the people trying to keep warm. All night long these people had been dancing in the Pueblo House, while the Virgin of Guadalupe smiled serenely down on her subjects stepping and whirling before her.

But now the dances were over for the night and everybody was sauntering out into the yard. While we waited I became acquainted with Margaret Walters, a typical Tortugas Indian girl, about 18 years old. The Tortugas are so mixed with other races that one can hardly tell them



The aged, the crippled and the sick moved slowly up the rocky trail on their annual pilgrimage of atonement. At night a trail of fire blazed from the top of the mountain to the bottom, crossed with a flaming horizontal bar to form a gigantic cross. Atherton Aerial photo.

from their Spanish-American neighbors. This was true of Margaret. Her mother is Spanish-Indian and her father a white man. For 11 years Margaret has followed this one tradition of her Indian ancestors by dancing in the Guadalupe ceremonies.

The village of Tortugas, a few miles south of Las Cruces, New Mexico, has the same appearance as any other little Spanish-American community—a few dozen humble adobe huts, like a brood of yellow chicks, gathered in the protection of the grey walls of the mother-church. For 363 days of the year it is a dreamy, lazy little

village nestled on the edge of the mesa, beyond an irrigation ditch. Yet here, on those other two days of the year, come to light the age-old secrets of its people, traditions that were born in the darkness of prehistoric times. On Guadalupe Day, December 12, and on the day preceding it, they present to the public the last remnants of their Indian heritage—ceremonial dancing. The fiesta of Tortugas is a mellow blending of three races, three ages and three religions, with a result that is both quaint and satisfying.

Tortugas' story goes back to those times when much of New Mexico was still an unmapped wilderness. A few of the Indians had intermarried with the Spanish colonists around Santa Fe, so when the Great Rebellion of 1680 occurred, in which the Indians threw off the yoke of Spanish tyranny, there were many who were sympathetic with the conquerors. The Spanish governor and the colonists of Santa Fe escaped massacre by fleeing towards Old Mexico.

They were joined by a small band of friendly Indians from Isleta Pueblo near Albuquerque. Among these people were men, women and children of all ages, and the journey being very hard and trying, many grew ill and discouraged. After the caravan was beyond imminent danger, a halt was called for a rest in what is now Mesilla valley. The sick Indians and the very old felt they could go no farther and decided to stay in the broad fertile valley. These Indians founded the Pueblo of Tor-

"Zoot-suiters" change to stoical Indians during Guadalupe fiesta.



tugas, but the balance of the tribe remained with the Spaniards until they reached the safety of El Paso del Norte, beyond which they founded the Pueblo of Ysleta del Sur.

By now the people in the yard were making preparations for their annual pilgrimage of atonement to Mountain "A," five miles across the mesa land. It was still dark, only a little after six o'clock, but we could see them starting out on the dim desert trail, moving slowly because everyone was going—women, children, the aged and the crippled, even the sick. Spanish-Americans from all over the valley and even a few white people had gathered to join in the procession.

"Tell me, Margaret, why do your people make this pilgrimage to the mountain each year?"

She looked at me, puzzled.

"I don't really know," she answered slowly. "It is just our religion. We make a promise to the Virgin that we will climb the mountain and then she will do most anything we ask of her. We've just always climbed El Cerro."

And so we joined the procession. After several weary hours we reached the foot of the mountain which apparently had been nameless until the State College placed a huge letter of white stones on its summit. It stands alone on the mesa a bald smooth-looking hump, like the back of an elephant. It had figured in Indian ceremonies long before Mesilla valley was colonized by the Spanish.

We started climbing. The trail was not so smooth now, and the procession slowed down to a few steps at a time. The going was especially difficult for the children and the old ones. Glancing down, I noticed a few splashes of blood on the stones. Someone had made a vow to go up barefooted or perhaps on their knees. Ahead of me, Margaret tripped on a sliding stone and twisted her ankle. She only smiled and kept on going, limping a little.

Men called "officers" stood by the side of the trail with long whips, and once when there was a burst of childish laughter, I heard the obvious swish-swish of them. Everybody must be reverent here. Another time we had to stop because a woman up ahead had fallen down over the rocks. Someone volunteered to assist her to finish the painful climb. Later she had to be carried down the same tedious path, but now she wouldn't give up.

Noon arrived before the whole procession finally reached the top of the mountain. After everyone had eaten lunches and rested, mass was held for the Virgin. The afternoon was spent in various activities. The men dispersed to gather wood and stacked it in small piles over the side of the



Costumes of this group of dancers known as "Don Santos" show blending of Indian, Mexican and American.

mountain, to be lit at night. The women fashioned crowns of creosote brush and decorated them with crucifixes and other ornaments carved from the roots of the sotol plant. The crowns and similarly decorated staves were to be used in the final procession down the mountain.

The day passed quickly and when dusk

descended the numerous fires were lit. The people down in Mesilla valley saw a straight path of fire blaze down the mountain from top to bottom. Then miraculously as if a giant hand had traced it with flame, the horizontal bar of a gigantic cross appeared. There on the side of the mountain burned a huge cross, a symbol of the Tortugans' faith.

Chief of the "Matachinis" who perform one of the fiesta dances.



Back at the village each house was lit by the traditional *luminaries*, or candles placed in paper bags partly filled with sand. Each flat roof was outlined with these homemade lanterns. It was a quaint sight, as if flocks of softly-colored fireflies had settled in meticulous rows upon the roofs, winking and blinking at the passerby.

That night, upon their return from the mountain, the weary Indians held one more dance.

Guadalupe Day blossomed forth crisp and clear with brilliant skies and warm sunshine. A typical American carnival with all its hurly-burly had pitched its gaudy tents beside the church and already the merry-go-round was grinding out its wearisome tunes. Two armed guards were stationed at the church door and at frequent intervals fired their guns into the air as mass was said within. Could this have been to scare away evil spirits?

Presently the people thronged out of the church and the dances began. One group of men, women and children formed in front of the church and went through a graceful dance to the thunder of an ancient tom-tom, while several men intoned the thrilling old chants.

"These are called just 'Indians' or



In fiesta costumes. Older girl recently joined the WAC.

Indios," Margaret told me as she joined them. "With these I have danced six years . . ."

Perhaps the most interesting part of this dance was the small boys of seven or eight going through the traditional steps with much precision and soberness.

Small boys go through traditional steps with much precision and soberness.



Another group of dancers called the *Aztecos* were performing in two columns before an ornate shrine at one side of the church. Although all of them were men they were grotesquely dressed in knee-length skirts of brilliant silk. Each wore an apron from Old Mexico, embellished with such signs as *Juarez* or *Viva Mexico*. A silk cape with the picture of the Virgin of Guadalupe floated behind. Crowning all was an elaborate headdress of feathers, crepe-paper flowers, mirrors and fluttering ribbons. All carried gourd rattles and huge fans. The colors were as brilliant and striking as possible, and the first view of the dancers was breathtaking.

The music was furnished by a drum and a fiddle, the tune quaintly pleasing. The steps themselves, possibly derived from Spanish folk dances, were similar to the American musical game "Skip to My Lou, My Darling." Three or four *abuelos* or grandfathers danced independently in and out the two columns and kept the crowd laughing with their clever buffoonery. One fellow attracted special attention by performing a number of difficult steps with untiring rhythm.

All of these dances revolved about a small girl who stood before the shrine, clothed in a white cape on which was embroidered *La Malinche*.

In the culminating dance of this group we could see a definite meaning—the temptations of the soul and the resurrection from sin. One of the medicine-men tied a green ribbon around his waist and *La Malinche* held onto it while the *abuelos* guarded the sides. A masked dancer stepped from his line and pursued them. All in time to the throbbing drum, yet separately from the other performers, these dancers played a sort of tag in which the

masked figure tried to insert his fan between *La Malinche* and the medicine-man. Some years, so I've been told, he doesn't succeed, but this year he did after several strenuous encounters. *La Malinche* was immediately laid down on a bit of carpet before the shrine. As the dance continued, each performer surrendered his fan, head-dress and rattle to be placed tent-fashion over the small girl in a solid, colorful bier. When they had finished, the air was filled with a deep mournful tolling of the church bell.

"Aye, aye, ayeeeee!" The *abuelos* wept in such a frenzy that the crowd could not help laughing.

Everyone rested for perhaps ten minutes. When the dance continued, each performer reclaimed his adornments as he danced, until *La Malinche* finally was uncovered. Now the church bells rang out triumphantly, for the soul was saved. Immediately from the church door emerged a hymn-singing procession carrying in front of it the altar and candelabra. The dancers who has been performing in front of the church, bowed before the altar, backed away, and bowed again, leading this jubilant parade up and down the village streets. When at last they returned to the church, all of the dancing stopped abruptly. For nearly six hours these Indians had danced with only brief intervals of rest every half hour or so. All of them were exhausted and the little girl who was *La Malinche* hardly could stand any longer.

Before the day was over a thousand or more people had crowded the narrow streets which usually accommodate only a couple hundred inhabitants. The activities were not confined to the churchyard, but were spread over the whole village. Women had little booths where they sold candies, scarves and magazines from Old Mexico. There were fruit stalls, cafes and even hamburger stands. Two Mexicans regaled their audience with Spanish ballads sung to guitar accompaniment.

When the sun went down in a blaze of gold, the evening was spent in Mexican dances in which everyone took part, but soon the night turned crisp and cool, and everywhere tired people started homeward. Guadalupe Day was at its close. Tomorrow Tortugas would be only a little adobe town dreaming in the southern sun for another year.

"Will you stop dancing after you are married?" I asked Margaret Walters, as she prepared to leave for home.

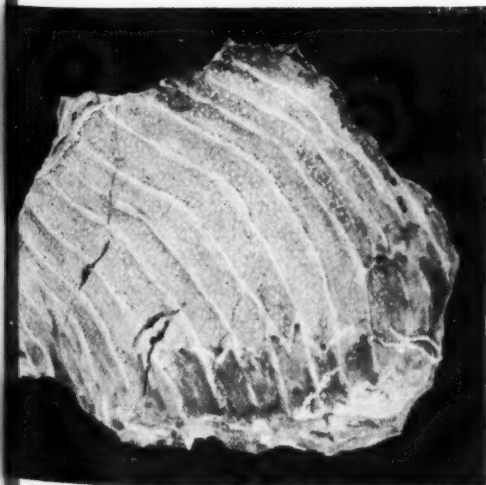
"No, I don't think so," she replied, "It is good to dance for our Virgin Guadalupe, and I shall dance for her just as long as I can."



Old rope grey, smoky black, buff, golden amber and tortoise-shell brown make a quiet and beautiful combination. Petrified palmwood.



Tomato red, terra cotta, mustard yellow, maroon and boiled rice white. Sounds terrible but actually as beautiful as an oriental rug. Agatized wood, Arizona.



Dove grey in four shades with white. Light stripes show late wood of growth rings; wider and darker part, early wood. Petrified oak.

Over the Mojave desert hung a brownish haze. The air felt like hot jelly. At times the ground quivered like a live animal. A herd of little three-toed horses sought relief from the heat in the forest of locust, oak and fanpalms—but there was no relief. The air thickened, the sky darkened, the ground shuddered like the skin of a fly-stung pony. Then the wind struck. And the fury of the storm was like the raging of a herd of crazy mastodons . . . This was two million years ago in Horse valley up Last Chance canyon. It is the setting for the story of Petrified Wood, which began back there in the era which geologists call the pliocene.

Wood, Time and Stone

By JERRY LAUDERMILK

Drawings by the author

Photomicrographs by Dave Howell

Polished Petrified Specimens in J. G. Talbot collection

YOU wouldn't recognize the scene I am about to describe as a California landscape but that is what it was—over towards Last Chance Gulch about two million years ago early in the epoch geologists call the pliocene.

It was late in the afternoon of what had started out to be a bright clear summer day. Although it still lacked several hours until sunset it was beginning to get dark. A brownish haze, hanging like a dirty curtain in the western sky and drifting toward the east, was cutting off the light. This was dust shot high into the air by a newly erupted volcano in the range of mountains about 10 miles west of the place I call Horse valley. Here, in a meadow bordered stream, a pair of hornless rhinoceri splashed and wheezed in refuge from the heat. The sultry air lay like a hot and stifling blanket over everything. Something was definitely wrong with the entire situation. At times the ground quivered like a live animal and waves of pressure from the detonations deep in the crater showed that another steam explosion had taken place as she coughed out dust and cleared her throat.

All the animals felt the change, especially the herd of three-toed horses, *Hipparion*, about the size of small deer which came galloping from the cover of the forest where trees of locust, oak, and a scattering of fanpalms stretched back toward the foothills. These foothills and the mountain range beyond long have been gone. Today their remnant lies scattered far and wide mixed with the alluvium and conglomerates of the Rosamond formation. But in the days I write about they were the biggest things in sight. The present Sierra Nevada had not yet been shoved up. This was an event to come a million years later.

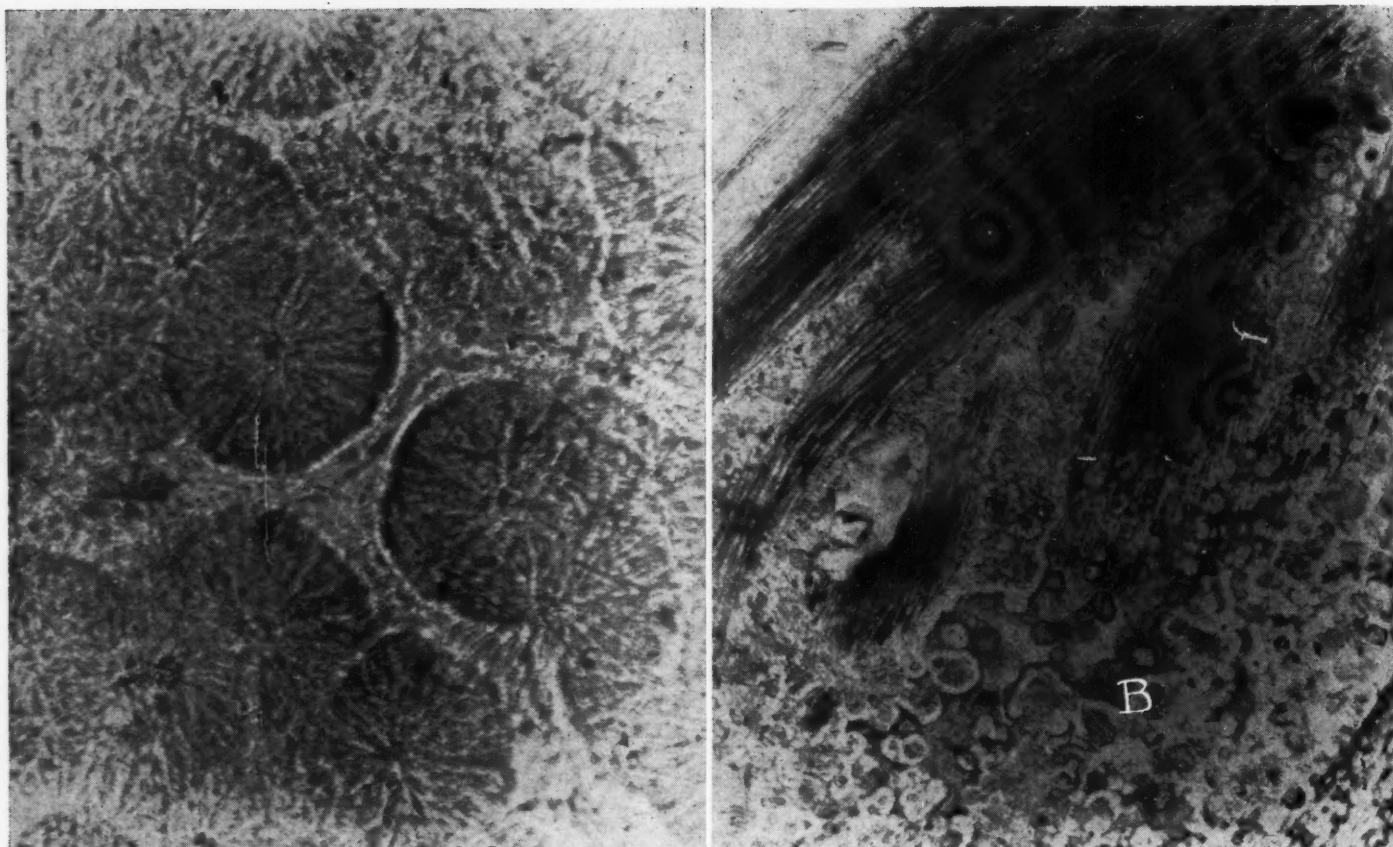
At first, when the day began to go wrong, the horses sought relief from the heat in the shade of the forest, but now it was hotter there than in the open meadow. The leader paused for a moment's recon-

naissance and then, as at a signal, the whole herd trotted in the direction of an old giant locust, the scratching post of the herd, which grew close to the stream. The shade of this old tree lay upon both land and water and always had been a cool symbol of the horse paradise which was the meadow valley. This ordinarily peaceful scene was abruptly broken by the great change which had come upon things.

The interruption was not so much a sound as it was a mighty concussion or pressure that struck like a shove. For an instant the air felt like a hot jelly. It seemed to thicken, the sky darkened and the ground shuddered like the skin of a fly-stung pony. The horses whinnied with fright, kicked up the sod with their hooves and disappeared over a small rise of land toward the east. Then the wind struck.

The random fury of the storm was like the raging of a herd of crazy mastodons. The palm trees were bent nearly horizontal but from the toughness of their fibrous trunks only a few were broken. With the oaks and locusts things were different. Many were ripped out by their roots and thrown flat and the old locust scratching post heeled over in a shower of pebbles and soil from its roots, and with a threshing of branches and crackling of splintered wood it splashed into the stream. Rolling over and over it began a journey toward the south where, had things followed an uninterrupted course, it would have ended its days in quiet decay in the swamp miles below. But things were definitely changed and with them the course of the stream.

A landslide had dammed the watercourse with dirt and rocks and the pond so made was rapidly filling with the backup from the stream. Here the old scratching post, in company with a thousand logs and branches of oak, pine, palm and other locust trees began to circle round and round in the backwash. Now and then the glint of lightning as it split the hot twilight gave



Left—Area of Joshua tree section with rapidly deposited silica gel showing included carbon particles in radiating lines about a nucleus. Radiation probably is interfaces of lines of radiating quartz crystals in chalcedony. Right—Another area of Joshua tree section showing different type of fibers. At B are parts where deposition has been too rapid for molecular replacement.

the wet logs a phosphorescent look. Then it began to rain.

The rain that fell was hot mud. At first big gouts, then as the sweltering night darkened the rain poured in torrents of muddy water. Through the wet curtain a red glow in the west showed the center from which all this disturbance radiated—the volcano.

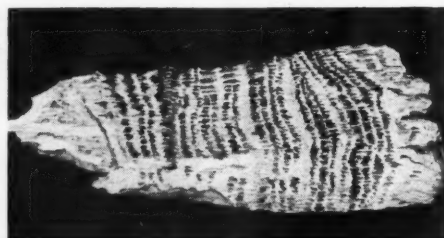
All that night and the next day and for several days it rained and the stream swelled to a great muddy waste fed by the millions of rivulets that scoured their way down the slopes of the adjacent foothills. Finally the dam gave way under the pressure of the millions of tons of backed up water and in a mad jumble, mud, logs, carcasses of horses, camels, rhinoceri, ancestral pigs and even a few sabertooth cats were swept into the original stream bed. Finally, the excess of the water drained away and all settled down into a bed of volcanic mud.

This was only the beginning. A new set of conditions had been imposed by the volcano upon Horse valley. Other cones erupted and as the years passed so great became the accumulation of ashes that trees which had escaped the destructive winds of the first cataclysm were buried alive still standing upright. Many feet of powdered rhyolite and pumice were deposited in

layer upon layer above them and now, to all purposes, they were locked up in a matrix of rock, a tuff which, although compact, was still permeable to percolating groundwater. Years stretched out into decades, centuries and millenia while the obscure chemistry of petrification went on in the fibers of the buried logs.

At the beginning, in fact for the first few hundreds of years, the logs simply were soaked through and through by the underground water. But this was not ordinary water. In the first place it was highly mineralized with chemicals dissolved out of the powdered pumice. Some of the most abundant of these salts were the alkalis, soda and potash, combined with silica. The

Salmon pink, wheat straw yellow, mulberry and white. Polished tangential section through petrified root.



water also was distinctly warm, perhaps hot, but nowhere near boiling. It is probable that the change from wood to stone took place at a relatively shallow depth—not more than 50 feet and likely much less. We know all these things by interpretation of the evidence.

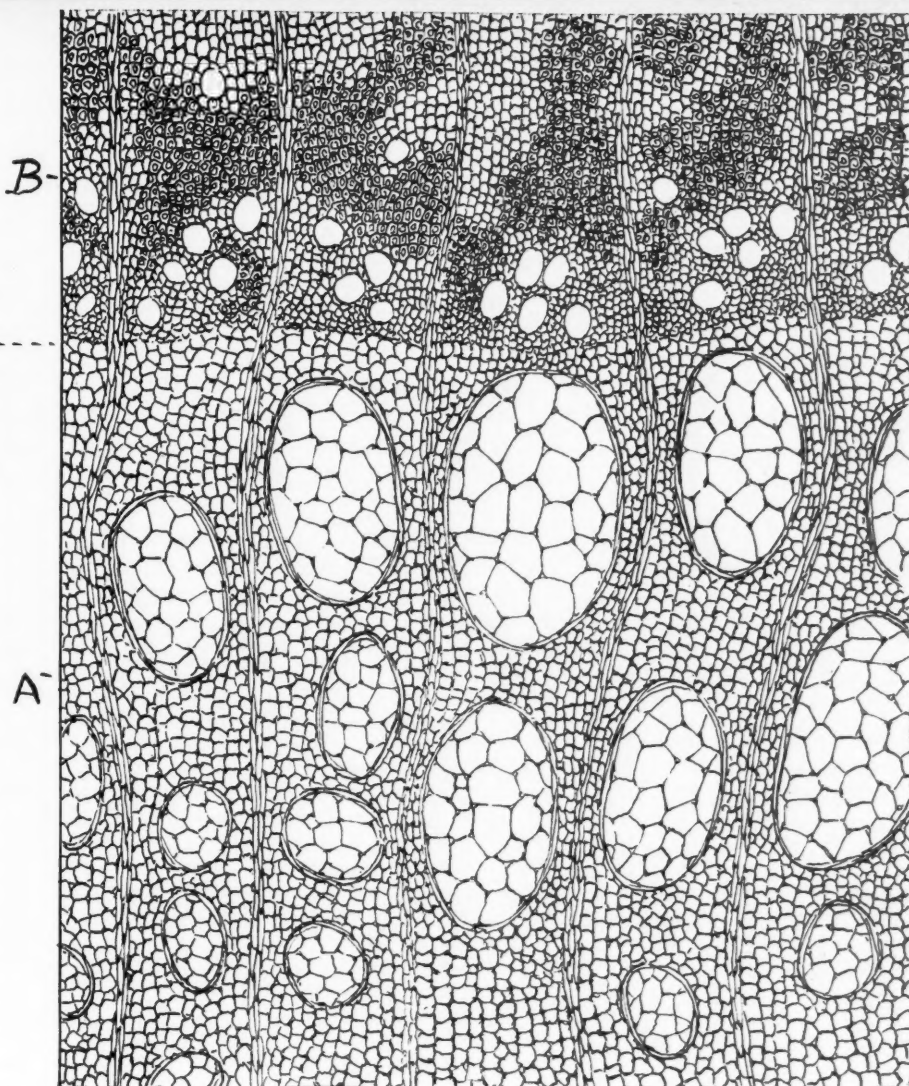
Anything that has lasted long enough carries its history written upon it by the marks of its experiences. These marks or signatures are evidence. After its proper interpretation by comparison of natural conditions with the same conditions produced artificially, it frequently is possible to reconstruct a picture of the things that have happened in a specific case. For instance, it can be shown that during the entire lifetime of the old locust scratching post nearly a hundred years of climatic peace endured in Horse valley—no droughts, no severely cold winters, no accidents such as forest fires or floods. We can deduce this from the condition of the rings of growth which nearly all are uniform and even in contour. These growth rings are the concentric circles of alternately dark and light wood we see in the end of a sawed log. The darker and wider portion of the growth ring is composed of the open-textured, rapidly grown spring and summer wood, while the lighter, more dense and compact wood is a tissue built

up in winter. When these growth rings are even and uniform, even and uniform seasons are indicated.

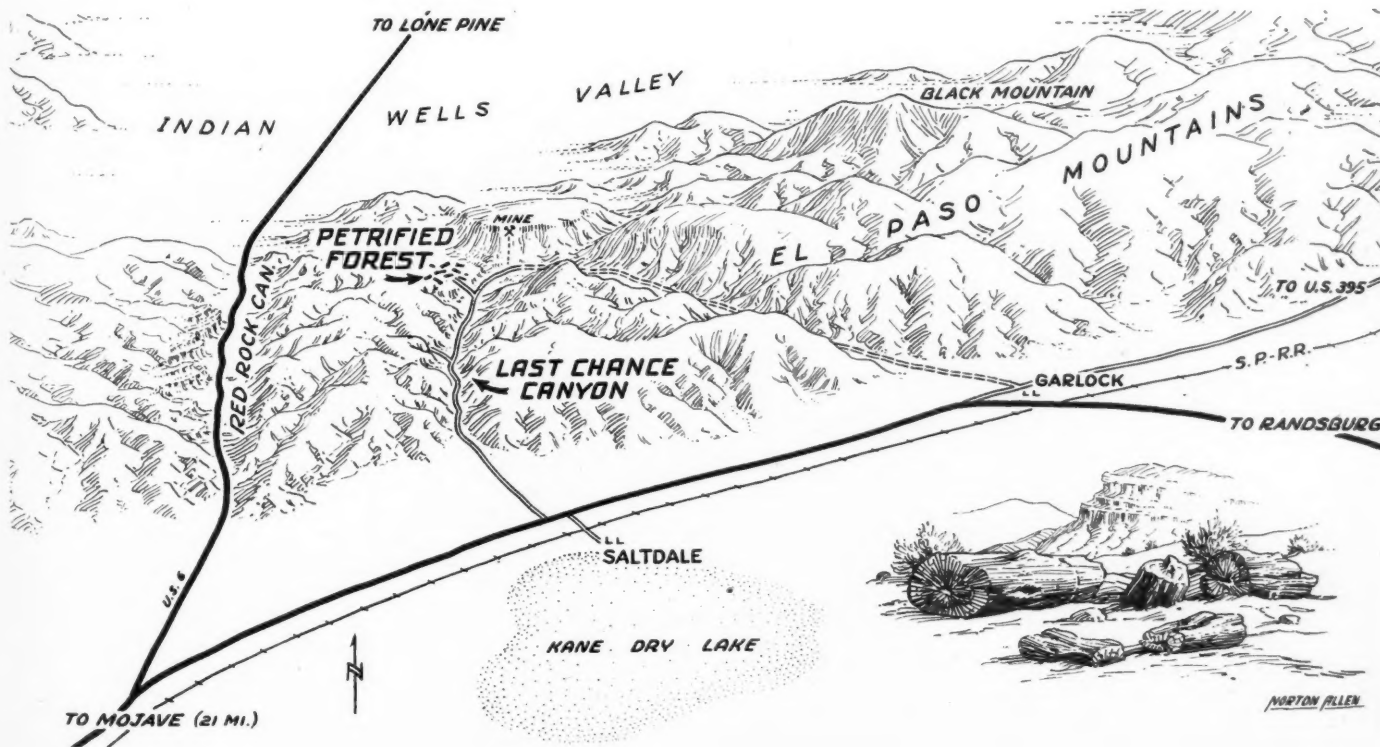
We can tell that the water which petrified the log was not excessively alkaline by the fact that decay took place and the bacteria which cause wood to decay flourished, which they would not have done in a strongly alkaline solution. From the same evidence we also can tell that the water was not excessively hot. Also, the reactions took place at a relatively shallow depth because the cellulose-dissolving bacteria never have been found at depths greater than 50 feet. Beyond this depth pressure and lack of oxygen preserve wood against bacterial action and what is called *mummified* wood is formed. This is a change of the wood to a black and coaly material which retains all the microscopic structure of the wood fibers. By proper treatment mummified wood can be bleached, softened, sliced and stained for examination just like a piece of fresh wood. Such wood is not petrified.

In the case of our locust log, petrification took place by what is called molecular replacement. When bacteria attack woody tissue they not only attack the substance cell by cell and fiber by fiber but molecule by molecule. Wood is composed of a compound of carbon, hydrogen and oxygen called cellulose. A cellulose molecule is the smallest cluster of carbon, hydrogen and oxygen atoms that can cling together in the right proportions to have the properties of woody fiber or cellulose. Such a molecule is many thousand times—perhaps a million times, too small to be shown by the most powerful microscope.

During their growth and reproduction



Microportraits of thin sections petrified locust wood from Last Chance canyon. Although specimen is completely chalcedonized, every detail of structure is preserved. A and B are the two zones of a single growth ring. A shows woody tissue built up during spring and summer. B is fall and winter wood.



bacteria feed, that is, they take in and utilize food materials. For the particular types of bacteria that cause wood to decay (there are about 50 species) the cellulose first has to be dissolved before it can be assimilated. This is brought about by chemical substances called *enzymes* secreted by the living bacteria. The enzymes break up the cellulose molecules into simpler compounds some of which have acid reactions. One of these is carbonic acid. These acids cause silica replacement, a process that takes place about as follows:

The water that soaked into the old log contained much dissolved silica and penetrated by way of the pores and ducts naturally provided in the woody tissue of the log for the conveyance of sap. The silica was present as the silicates of soda and potash in solution. So long as the water stayed alkaline, everything was all right—

the silica stayed in solution. But when the water became acid, things began to happen. Part of the soda and potash molecules let go of their silica in favor of stronger and more romantic acid loves. The silica which had been jilted in this fickle manner was precipitated from solution as a gel.

Now imagine that you have a pair of super-microscopic X-ray eyes so that you can see what went on in the locust log when it petrified. The first thing you notice is the effect of local action. This is an interesting phenomenon which takes place in many geochemical reactions and means just what its name implies. Suppose you have a large volume of alkaline water—in this case our percolating groundwater. Now suppose that a second solution with an acid reaction is being continuously added in tiny amounts to the first solution. The reaction takes place on a tiny scale and

only at the neighborhood of the point where the acid solution blends with the alkali.

Now when our locust log began to petrify, the bacteria, enormous things when compared with molecules, filled the cells of the decaying wood with their colonies and each bacterium was surrounded by an area of acidity. In between the colonies and their areas of acidity there remained unattacked stretches of woody tissue through which the alkaline water could percolate. But in the acid areas which were molecular films on and in the cells of the dissolving cellulose, silica was deposited molecule by molecule.

This replacement was very slow. It can be illustrated by the following comparison: Suppose you have a pavement made of wooden blocks placed so as to form a pattern. You want to replace these wooden blocks with blocks of stone of the same size but you don't want to disturb the original pattern. Instead of tearing up the pavement and starting from scratch you pull out one block today and maybe two or three blocks tomorrow and the only constant system you observe in these operations is that the instant you take out a wooden block you replace it with one of stone. Eventually all the wooden blocks will have been replaced by stone and you have in fact petrified your pavement block by block. This is what took place in the locust log. Every detail of the pattern was preserved as perfectly as if it had been a section of fresh wood. Sometimes even the bacteria were caught out, died and also were replaced by the silica, leaving petrified microbes.

Where this replacement has occurred on a submicroscopic scale, slowly, preservation of detail has been perfect. In cases where local action has been rapid, the silica has been deposited in large blobs of silica gel and the condition is, to go back to the pavement example, as if you started out patiently to do the job block by block, then you tried to rush things, tore out blocks by the tier and filled the vacant places with concrete poured in by the bucketful. You finish the job, but do it in a sloppy way and preserve none of the pattern in the hasty places. These two conditions are shown in the photomicrograph of the petrified joshua tree from Yermo.

In this locality at about the same time there was so much excitement over in Horse valley, many joshua trees and other types were buried and petrified in much the same way as the locust log. But for some reason in the section shown, while part of the silica was deposited molecule by molecule, other areas close by were

Section of mummified oak from very deep gravels of Colorado river, Arizona. Although specimen is extremely old, possibly as old as the chalcedonized wood from Last Chance canyon, it still is essentially wood fiber. Bacterial action was prevented by depth and pressure and lack of oxygen.



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finished with a rush and structure has been lost in the lumpy mass of silica gel. An interesting feature of these lumps is the presence of carbon derived from the decayed yucca wood and arranged in radiating lines. There are other interesting phases to this decay and silicification of wood.

Sometimes specimens, big logs, are found where only one end of the log has been buried in sand or ash favorable to silicification and the other end has been buried in clay or soil. The log then will show one end changed to stone and the other to lignite or brown coal through ordinary processes of decay such as take place in peat bogs.

Proof that slow decay in the presence of silicious water was definitely the cause of the precipitation of the silica is shown by a specimen of agatized wood from Arizona now in the geological museum of Pomona College. Part of this log had been charred, and although the rest of the specimen changed to agate, the charcoal stayed in its original condition. It can be chipped off, and when heated, it glows and burns like any other sample of charcoal. The ash that remains does not show a great deal of silica in its composition, only slightly more than in the ash of ordinary charcoal. This indicates that the bacteria which decayed the original wood could find nothing to feed upon in the charcoal and that there was no local action and no replacement of charcoal by silica.

This also tells something about the degree of alkalinity of the petrifying solution in this case. Charcoal has the property of absorbing or binding down certain substances on the inside of its pores. This is different from absorption where the absorbed substance fills up the pores like water fills a sponge. If the water had been very alkaline a greater amount of both alkalies and silica would be found in the ash.

The striking colors frequently shown by polished specimens of petrified wood generally are due to oxide and hydroxide of iron carried along in the mineralizing solution. But sometimes in the case of dark smoky brown and blackish specimens, the color is due to finely scattered particles of carbon dispersed throughout the colorless chalcedony matrix.

The logical question to ask here is, "Is wood being petrified at the present time?" The answer is "Yes." Wherever the proper conditions occur—that is, wood, silicious alkaline water, bacterial action and plenty of time—petrification will take place just as it did in those far-off days when Hipparion galloped through Last Chance canyon.

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Sez Hard Rock Shorty of Death Valley

By LON GARRISON



"That Baldy Williams," complained Hard Rock Shorty, "is sure an embarassin' guy to go out with. I've talked some about him before but he sure can think o' more darn ways to get you into trouble than any other seven fellers in Inferno."

"Now, of course, Baldy's real interestin' company. If he wouldn't do these fool things—but let me tell about the last time we was in Los Angeles—

"We'd been there too long an' was gettin' homesick an' Baldy went in to a fancy bakery he seen along the street an' just for comp'ny started talkin' to the baker. The baker was a funny guy with a little moustache but he didn't know much about the desert. Baldy was admirin' some o' the scenery that was decoratin' the cakes an' he says—

"Yuh know, them cakes're purty but they ain't as purty as the sun goin' down over back o' the Panamints an' the view from the store porch in Inferno."

"Sput!" says the baker. "I weell make that on a cake too!"

"What?" says Baldy. "You'll trim the cake with desert scenery?"

"But of course," says the baker. "So we go back tomorrer an' there's the cake, purty as a little red wagon an' lookin' good enough to roll in. Baldy looks it over real careful."

"I'm disappointed," he says.

"What?" screams the baker. "Disappointed?"

"Yup," says Baldy. "There ain't enough red in that sunset—the desert don't look like that."

"Sput!" says the baker. "Come back tomorrer."

"So we go back tomorrer an' this cake really looks just like the view over the blacksmith shop only purtier."

"Gosh!" says Baldy. "That's perfect!"

"Sput!" says the baker. "Of course! Where shall I send it to?"

"Send it?" asks Baldy. "Oh—I'll just eat it right here."

TRUE OR FALSE

Quiz for this month is another "easy" one. It is mainly a set of review questions on material published during the past six months in Desert Magazine. If you've been reading Desert that long, you should score at least 50 per cent correct, making you a full-fledged member of the Desert Rat fraternity. If you score 15 or more, sign your name hereafter followed by "S.D.S." (Sand Dune Sage) Answers on page 30.

- 1—Dinosaur tracks may be seen in Split Mountain canyon, in Vallecitos area of Borrego valley. True..... False.....
- 2—Meteorites are very smooth, having polished effect, from great heat and speed. True..... False.....
- 3—Albuquerque and Santa Fe, leading New Mexico cities, are situated on Rio Grande river. True..... False.....
- 4—Arizona Strip is north of Grand Canyon. True..... False.....
- 5—Since Navajo Indians do not have full citizen rights, they are not inducted into armed services. True..... False.....
- 6—Yuma and Tucson, Arizona cities, are located on same U. S. highway. True..... False.....
- 7—Mojave Indian tribe's home is confined to Mojave desert, California. True..... False.....
- 8—Red-tail hawk can be trained as a falcon, or hunting bird. True..... False.....
- 9—There are no fish in Pyramid Lake, Nevada. True..... False.....
- 10—Incienso is another name for Desert Encelia. True..... False.....
- 11—Chief ore to come from famed Yellow Aster mine of Randsburg, California, was copper. True..... False.....
- 12—Emeralds have a hardness of seven in the Mohs scale. True..... False.....
- 13—Most of "jewels" in cheaper watches are garnets. True..... False.....
- 14—Red Ant Chant is a Zuni folk song. True..... False.....
- 15—Poison of Gila Monster is secreted in lower jaw. True..... False.....
- 16—Kangaroo rat is a nocturnal rodent. True..... False.....
- 17—Mirages are optical illusions due to refraction or reflection of light rays as they pass through layers of atmosphere of unequal density. True..... False.....
- 18—Diamond is only precious gem to occur at great depths. True..... False.....
- 19—Salton Sea, in Colorado desert, is approximately 25 miles long. True..... False.....
- 20—Jedediah Smith was outstanding leader in Mormon church. True..... False.....

Volcanic Bombs Described . . .

FLAGSTAFF—Prehistoric bombing of Arizona is the subject of an article, "Cored Bombs From Arizona and California Volcanic Cones," by Major L. F. Brady of Museum of Northern Arizona, and Dr. Robert M. Webb, professor of geology at UCLA now teaching army personnel at ASTC, in August-September issue of Journal of Geology. Study deals with volcanic bombs which in contrast to type now raining down on the earth, do not explode after landing. They are chunks of hot and plastic lava ejected with tremendous force during a volcanic eruption. Paper describes various types, their origin, composition and occurrence.

IS DESERT LATE? . . .

War-time problems both on the production and circulation "fronts" have slowed down delivery of DESERT to its readers. Please wait until after the first of the month to notify us of non-delivery. But FIRST be sure you have given us your present address BEFORE the 5th of the month, so we will have had time to make the change on our mailing list. Otherwise there may not be an extra copy left for you. Because of paper shortage we must limit number of copies printed to minimum.

We are sure we can count on the cooperation of our DESERT friends in regard to address changes. If your address in the near future is uncertain, ask us to HOLD your copy for you.



The Souths have been home from their wanderings a month now—busily packing their household goods up the trail from the foot of Ghost Mountain to Yaquitepec, cleaning and repairing the cisterns in which they hopefully expect to catch a water supply, and making new plans for building next spring. They thought life had settled down to almost normal—but a night of peaceful slumber suddenly was broken with a ghoulish hubbub. Bang! Crash! Skreek! Clatter! There was a hammering and beating and grinding and creaking and the chilly jangling of chains. They rushed half-awake to the unfinished room, as Rudyard who is noted for his excessively cheerful imaginings, shrieked, "A mounting lion! He's escaped into the house an' he's dewouring someone. He's cwunching up bones!" When the family solved this mystery, they cleared up the case of the missing knife, the colored pencils and toys.

Desert Refuge

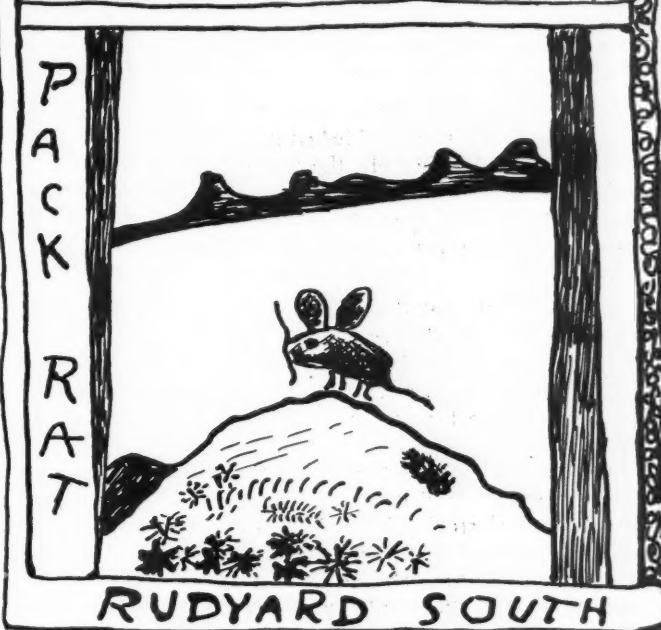
By MARSHAL SOUTH

A BIG whiptail lizard moves slinkily across the noon-glinted stretch of white gravel before the house. In the shadows of the gnarled old juniper tree, where the sifting sunlight makes fretted patterns of gold upon the bluish-brown mosaic of fallen ripe berries, Rudyard and Victoria sit close together, intently turning the pages of an old picture book.

There is a sense of hush and stillness over everything, despite the restless stirrings of a wandering little desert breeze that harps a low sleepy song of solitude with its swaying of an open window. Tanya and Rider are away off down the trail somewhere, doing their daily part in the water carrying program, a task in which we all share. Above the somnolent lullaby of the rasping, wind-swaying window hook, lifts the occasional hushed murmur of voices from the two engrossed youngsters under the juniper tree. The peace of the desert lies over everything like a crystal bowl. Ghost Mountain and all of the vast stretch of the shimmering wastelands beyond are a-drowse in the sun.

But in all the wide-flung desert sky there is no hint of rain. And rain we need desperately. All the desert needs it. Even the chollas and the mescalos are beginning to look a bit discouraged. Cleaned and new tarred our empty cisterns wait. But in vain. The days march past on brassy feet. Dry, fine, thirsty dust is upon the creosotes and upon the yuccas and each sunset the dispirited clumps of beavertail seem to shrink a little smaller within their wrinkling skins. Still it does not rain.

Oddly enough dry conditions do not seem to have had a depressing effect upon our bird visitors during the past nesting season. Rather the reverse. For the first time in our records, all of the little houses we had provided were used, even the oldest and least pretentious ones. There had been such a demand for



quarters that some of the late comers had had to construct hogans and wickiups for themselves. This they had done in the precarious summits of junipers and under the sagging bundles of mescal poles that span our ramada. It must have been an interesting colony. Evidently we missed something by not being at home.

Judging by the varied types of building material used in different nests, several new varieties of birds had joined the usual crowd. Our old friends the olive-sided flycatchers, who have a permanent lease upon the little red-roofed house in the juniper by the cisterns, had been back, of course. And the desert sparrows. And the canyon wrens had occupied every one of the hollowed mescal butts tucked away in the shadowy places. And the house of the purple finches had been lived in too, as had the domiciles of all the other old timers.

But we could not figure out what little desert sprite had resided in the diminutive bungalow way up on the summit of the pole above the ramada. Nor could we determine the builders of the new wickiups: Birds are as definite as humans in their architectural designs. But, as we made the rounds, cleaning out the nest boxes and getting things ship-shape for next season, we could not decide who the newcomers had been. Maybe they'll come back next year. Anyway we're glad that while we were away adventuring on far trails, our little house here among the swaying mescal blooms had its loneliness cheered by the constant bustlings and twitterings of a glad company of feathered friends.

Life at Yaquitepec is back almost to normal. Not quite, for there is much arranging and contriving and even new construction to be done before we can thoroughly drop back into a smooth course. We had feared there might be a few wistful regrets over the memories of frogs and minnows and waving green cattails and the murmurous gurgle of running springs. But not

a bit of it. The children have enjoyed their wanderings. They have known what it is to have water in abundance. They have expanded their horizons and have added to memory's storehouse scores of localities which before were just names on the map. I think Victoria neatly sums up the feelings of all three: "Twips," says Victoria, "are pwetty goot. But it is gooder to get back home to Yak-a-pek. I LIKE Yak-a-pek."

Ghost Mountain juniper berries are good and ripe. In fact the crop is about over—a fact to be noted with regret by the coyotes who by moonlight and starlight have come trotting up our precipitous trails to enjoy them. Coyotes at this season of the year seem to make juniper berries their chief article of diet. When you get them just right, the berries are good. A bit woody, but sweet and tasty, with a flavor reminiscent of St. John's bread.

The Indians appreciated them and ate them not only "as is" but also ground into meal and baked into little cakes. The tiny little hard, filbert-like kernel—the part you discard—has a diminutive, meaty interior which the chipmunks like. But one almost needs to be a chipmunk to get the benefit of the morsels. They are so tiny you never get a proper taste of them, however patient you are.

To the furry little rock dwellers, though, the size is just about right. From the open doorway of my writing house among the rocks I often have watched some little grey rascal, his tiny white-trimmed brush of a tail arched pertly over his back, squatting on the summit of a branch-shaded boulder, enjoying a hearty meal of juniper-berry kernels, scampering back and forth to help himself to the berries from the heavily laden branches, cracking the kernels expertly and letting the empty shell halves tumble down into the rock crevices below him. It is all very simple. But when you try to crack a juniper berry kernel yourself all you get is a smashed whiff of something which is just tantalizingly good enough to urge you to repeat the experiment again and again. And always with discouraging results.

Pack rats like juniper berries too. They work overtime to lay in a generous supply for winter. The big rat, who for so long has made his home under an overhanging eave of our roof, is no exception. He is a far-seeing thrifty individual. A few days ago he decided that his roof storehouses were inadequate. So he came down into the house, taking advantage of a hole where, during our absence, a chunk of mud plaster had fallen out. He is a big handsome rat with an expensive-looking waistcoat of cream colored fur. An old tenant of ours of several years' standing, we felt rather benignly disposed towards him. So, although we saw him flitting to and fro and hurrying importantly along shadowy wall bases in the lamplight we took no "steps." It was true that on several occasions we heard mysterious noises in the dead of night that linked themselves with our flitting visitor. But we dismissed the matter tolerantly.

Thus, in our role of gullible Simple Simons we drifted along, suspecting nothing. Not even when Tanya began to worry over the disappearance of her pet table knife—the one with the red handle. Or when Rider complained that a plaster mould, in which he made clay ducks, was missing. Or when Rudyard accused Victoria of having taken, and lost, a little red metal toy auto, on which he set great store—an accusation which she vociferously denied, entering a counter complaint that "Rudggy" had "tooked my wed an' green pencils."

Then one night came the grand finale. We had gone to bed in peace and goodfellowship with all the world. Only to be torn from slumber around about the witching hour of midnight by a ghastly hubbub. Tumbling from our covers, to the accompaniment of Rider's startled exclamations, Rudyard's shouted questions and Victoria's lusty yells, we were aware of an awful noise proceeding from the gloom-shrouded north archway, the one that leads into the unfinished room. Right now the archway, temporarily walled about by a lath and tar-paper cubby hole,

serves as a sort of storage space. It was from the depths of this cavern of shadow that the racket proceeded . . . hammering and beating and grinding and creaking and the chilly jangling of chains. "A mounting lion," Rudyard puffed breathlessly, scrambling at our heels as we snatched the dim-burning night lantern from its hook and dashed towards the scene of commotion. "A mounting lion! He's escaped into the house an' he's dewouring someone. He's cwunching up bones!" (Rudyard is noted for his excessively cheerful imaginings.)

But it wasn't a mountain lion. It was our old friend the pack-rat. In the flickering lantern-light, as we peered among the piled trunks and boxes inside the archway, all we could see was a glittering litter of smashed glass, a tumble of overturned tin cans and a wild scatter of spilled nails, screws and small bolts, in the midst of which confusion, jerking back and forth upon the surface of a big flat slab of rock, like a dumpy tugboat buffeted by a choppy sea, moved a battered old graniteware pot, upside down. Bang! Crash! Skreek, clatter! It would advance and retreat. And go sideways, lifting every once in a while and clanking back upon the stone as though all the jumping beans in Mexico had taken refuge beneath it. The thing seemed possessed.

"Ha!—the rat!" Rider said, his sleepy tones holding something of the melodrama of Sherlock Holmes of Baker street. "He's been on the shelf and he's upset that tippery carton of glass jars and nails and things. And the old pot has fallen down on him. He's under it."

And he was. All we saw of him, as we gingerly lifted the pot was a flash of expensive fur waistcoat—a whizzing pale streak that hurtled away into the shadows. To be followed later by a bammung plunk as his scrambling body hit the iron roof outside. He was gone.

But he left the evidence of his misdeeds behind him. For there at the foot of a big pile of earth which he had burrowed out from beneath the flat rock slab, lay Tanya's red handled knife, Rider's duck mould, Rudyard's tiny toy auto and Victoria's pencils, together with a varied collection of other trifles we hadn't missed. And under the stone, strategically disposed in a half dozen little nooks and corners amidst the piled boxes about it, were heaps and heaps of carefully gathered juniper berries. You'd never have dreamed that one rat could have lugged in so many berries in such a few days. In the morning, when we came to clear things up, we took out five tomato cans full of them.

After which, heartlessly, we took a little of our precious water and mixed it with some good desert clay into a thick mud. And we plugged the hole up under the beam. We believe in conservation and in industry. But there are limits.

Now, nightly, we hear our friend of the expensive fur waistcoat wandering disconsolately up and down on the roof outside the plugged hole. He does not enjoy being relegated to the region of outer darkness. His feelings, I imagine, are akin to those of humans who, every once in a while, are rudely awakened by Fate to a startled realization that they cannot forever trample insolently on the toes of God.

PROGRESSION

*Progression is an inward thing.
It matters not what clothes we wear,
What homes our varied incomes bring;
The soul must feed on different fare.
On wisdom gleaned from kindness given,
On thoughts of Truth and Life profound.
By such—and how we've loved and striven—
Is measure of true progress found.*

—Tanya South.

Black L

Dear Ed

I read popular region c in is said posit. 1943.)

I have parently and the county. and seas want the on my la the matte I do not deposits.

Dear interested you.—L.

Rattlesn

Dear Mi

It is of sun rays sonal exp I was sen southwes to build a

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These s entirely e sun, and morning have staye sun at tha proves the

More Ap

Dear Miss

I great article "P August iss painting. I want to s

DECEN

LETTERS...

Black Butte Map . . .

San Francisco, California

Dear Editor:

I read with interest about the present popular search for a "black butte" in the region of the Chocolate mountains, where-in is said to occur a valuable mineral deposit. (D. M., August and October, 1943.)

I have a map showing a Black Butte apparently between the Chocolate mountains and the Chuckawallas in eastern Riverside county. Hence, if you know some reliable and seasoned desert prospector who might want the opportunity to inspect this butte on my land, please have him write me and the matter can be discussed. . . Of course, I do not know if this butte has any mineral deposits.

HENRY J. BLOOM

Dear Mr. Bloom—Any letters from interested prospectors will be forwarded to you.—L. H.

Rattlesnakes and Desert Sunshine . .

Encinitas, California

Dear Miss Harris:

It is often said that 20 minutes of direct sun rays will kill a rattlesnake. My personal experience refutes this claim. In 1915 I was sent to a location about eight miles southwest of Thermal in Coachella valley to build a house on a claim.

Close by, some well-drillers had a camp. We were warned not to sleep on the ground because of the sidewinders which traveled at night, so we stuck some poles in the ground and swung our hammocks to them. Every morning we would find sidewinder tracks under our beds and around camp. These we followed and while most of them led to kangaroo rat holes where we dug out and killed many of the rattlers, on several occasions we found the snakes tightly coiled up in a neat depression which they had hollowed out with their bodies.

These snakes were out in the open sand entirely exposed to the full glare of the sun, and as this was about 8 o'clock in the morning I have no doubt that they would have stayed there throughout the day. The sun at that time was burning hot, so this proves the 20-minute theory erroneous.

EDWARD P. KINCAID

More Approval for Pilgrimage Story .

Cathedral City, California

Dear Miss Harris:

I greatly enjoyed Thomas Crocker's article "Pilgrimage to Yaquitepec" in the August issue, and hope someday to see his painting. If he paints as well as he writes I want to see his work.

KURT REINEMAN

Exposure to DM is "Four Star Take" . .

San Diego, California

Dear Staff:

Several weeks ago I was exposed to two volumes of Desert Magazine, and the result has been a 4-star "take." Why doesn't somebody tell me these things?

Your magazine is one of life's good things which this desert fan cannot afford to miss. Enclosed is two years subscription to take care of its continuance in the future. As for the past, I should like to catch up with other Desert readers and buy a copy of each available back issue.

Here, perched on an arc of San Diego's blue bayshore, is a lovely place to be, but in time of stress my heart goes back to the calming fastness of our Southwestern desert. In this, Desert Magazine is like the outstretched hand of an old friend.

Marshal South's articles and Tanya's poems are the highlight of each issue. Their spirit is a flickering candle flame, a tiny beacon of reassurance in a confused and troubled world . . . Your task must now be one with many handicaps. I salute you, and thank you for Desert.

MARY E. McVICKER

Explaining the Poets . . .

Pacific Beach, California

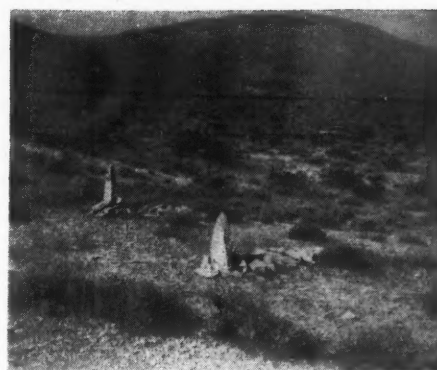
Dear R. H.:

Yes, poets are a peculiar tribe
And merit many an editor's jibe.
They are like other creative guys
With feet on earth and heads in the skies—
Painters, musicians and architects
And founders of new religious sects.
When the spell is on they've got to write
Surely as an Irishman must fight.
You can dam up a continental river
But the flood of poets—Mon Dieu, niver!
Why don't they keep their trash at home?
Well, why does a youngster have to roam?
Why does a poor man want to be rich
When nature meant him to dig a ditch?
Alas, each thinks he writes for the ages
Though he ends up in the D. M.'s pages!
Each poetaster who plays with rime
Hopes he will be a Whitman in time,
A Masfield or at least a Benet—
Each dog, he says, must have his day.
Time was when a poet was somebody,
His wares brought more than just bum
shoddy.

But in these times of science-wonder
It's not the fashion to dream and ponder.
Yet poets will keep on singing songs
As long as they feel joys or wrongs.
But I'm with you—when they get erratic
They and their verse should stay in the attic.

Verse-making now is a hobby indoor
And should not torture the editor.

CARROLL DeWILTON SCOTT



Who Can Identify Graves? . . .

Barstow, California

Kind Friends:

Enclosed photo of two graves was taken about one mile south of Hidden Springs, San Bernardino county, and about 100 yards east of what remains of an old road.

I thought some of the Desert Magazine readers could give the history of them. Have just read Edwin Corle's "Desert Country" and wondered if these could be phony graves referred to on page 307 as having been "planted" by Death Valley Scotty. I am inclined to believe they are.

G. R. WILLIAMSON

Collecting on a Coral Reef . . .

Vista, California

Dear Miss Harris:

In regard to a letter from "A Rockhound on a Coral Reef" in your October issue. Being a rockhound from the southeast coast of Florida, please allow me to suggest that if the rockhounds do some digging about, they should find crystallized shells and other things ever of interest to a rockhound.

D. C. ORTH

Six Years of Desert Covers . . .

Alhambra, California

Dear Miss Harris:

I have written before to tell you what I think of your wonderful covers and ever since the September number of Desert I have said I just must write again and tell the staff how much I like the covers of the August and September numbers, then came October with its so interesting Navajos and now Totem Pole with its shaft of vivid red against a desert sky.

It seems to me that never have you produced four consecutive numbers with covers so fine and that August and November are two of the best. Then I turn to September and its glorious desert sunset, compare it with that very first cover of November, 1937, and say to myself, "What's the use, when they are all so fine."

Six years of the most interesting and beautiful covers ever produced by any magazine, and inside these covers—well, others are telling you about that every month. Keep it up.

WILL H. THRALL

Travels Via Desert . . .

Los Angeles, California

Dear Desert Magazine:

I want to tell you that I think the Desert Magazine is the grandest magazine of its kind that has ever been published. I read everything in it from cover to cover, even the ads.

I am too old to follow the desert trails, but when I read the wanderings of the explorers and desert rats I am right by their side and what a grand time "we" have.

CARRIE B. MOORE

Sailor Will Head for Desert . . .

Utility Squadron 1
FPO, San Francisco

Gentlemen:

I would like to renew my subscription to your fine magazine. The sectional maps that have appeared with some of the stories will be a valuable guide to me, for I am making many plans to visit that country after the war.

Hunting Indian relics is my hobby. When I read of potsherds, arrowheads and flakes of flint, or an ancient Navajo watch tower, I locate and mark the spot on the map so I'll know just where to start when I get to the desert. When I see pictures of Monument Valley, I often wonder how many fine spears and arrows are lying at the base of those tall spires of rock. I have learned that eroded land and

shifting sand dunes are the best places to look. Monument Valley seems to have both.

Being a native of Wisconsin didn't stop me from learning about the desert. When my favorite campsites were covered with winter snow, I spent my spare time in the library reading about the cliff dwellings and the Indians of the Southwest.

On my way to the coast shortly after December 7th I saw the desert for the first time and wrote an 18-page letter home describing and sketching it as we traveled through. When we stopped at Gallup, I thought, Boy! I'm coming back to this town someday—definitely.

The brilliant colored sunrises and sunsets, the sheer red cliffs streaked with white, the broad expanse of sage and cactus are something that will use up rolls and rolls of 35mm Kodachrome film . . . Already a shipmate of mine from Phoenix has told me of some caves about 50 miles west of there, with walls blackened from smoke and the floor strewn with bits of broken pottery, flint chippings and corn cobs.

The only experience I wouldn't want to encounter is that of Tom Terriss in "The Canyon of Death" (July issue). That was by far the greatest story of all past 11 issues. Dig into your files and let's have some more like that.

VERNON G. LEUDTKE, AMM 2/c

TRUE OR FALSE ANSWERS

Quiz on page 26

- 1—False. What appear to be dinosaur tracks are concretions.
- 2—False. Meteorites are much pitted and crusted. See DM, Dec. 42.
- 3—False. Only Albuquerque is on Rio Grande.
- 4—True. Strip lies between north rim of Grand Canyon and Utah state line.
- 5—False.
- 6—True. Both are on U. S. highway 80.
- 7—False. Mojaves live largely in three groups today: Colorado river reservation south of Parker, Arizona; Fort Mojave reservation and near Needles, California.
- 8—True. See DM, Mar. 43.
- 9—False. Land-locked salmon called trout weighing 20 to 30 pounds, and many cui-ui are found in Lake Pyramid.
- 10—True.
- 11—False. Yellow Aster is noted for gold production.
- 12—False. Emeralds have hardness of 8.
- 13—True.
- 14—False. Rare Navajo healing ceremony, highlight of which is swallowing of live red ants in hot water by patient. See DM, July 43.
- 15—False. Location of poison is one reason Gila Monster is not as dangerous as analysis of venom would indicate.
- 16—True. 17—True. 18—True.
- 19—False. Salton Sea is 45 miles long.
- 20—False. Jedediah Smith was one of earliest explorers and mappers of the West.

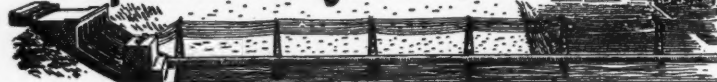
Achievement . . .

- On October 15, 1943, purchase of the electrical properties of the California Electric Power Company in Imperial Valley and the area in Coachella Valley destined to be served by the All-American Canal was completed, and Imperial Valley Irrigation District became the sole distributing agency for electrical energy in these areas.

- Thus was achieved a goal toward which the people of Imperial and Coachella Valleys have united their efforts for a quarter of a century. Full development of the power resources on the great All-American Canal now seems assured and both water and power will be put to the common usage of developing these two fertile reclaimed desert valleys.

SHARING THE BENEFITS OF WATER AND THE PROFITS OF POWER, IMPERIAL AND COACHELLA VALLEYS ARE IN TRUTH GOOD NEIGHBORS LINKED BY BONDS OF MUTUAL INTERESTS AND NECESSITIES.

Imperial Irrigation District



Use Your Own Power—Make it Pay for the All American Canal

HERE AND THERE... on the Desert

ARIZONA

Fiesta Planned for February . . .

TUCSON—Fiesta de los Vaqueros, cancelled this year for the first time in 18 years, will live again February 19 and 20, 1944, according to plans of chamber of commerce rodeo committee, headed by M. H. Starkweather. Prize money will be less, use of local stock will be emphasized. But new features such as chariot races and competitions for servicemen and units from near-by posts and stations are planned.

Poston Authority to Change . . .

POSTON—Colorado River relocation center here will be transferred January 1 from department of interior to war relocation authority, it was announced October 29 by W. Wade Head, project director. Poston center was first of 10 built by war department to house Japanese evacuated from military areas of Pacific coast. WRA will continue to develop land for production of food. About 2000 acres were under cultivation late this fall.

Navajo Language Gains . . .

PHOENIX—Indian Service development of written Navajo alphabet is basis of dictionary compiled by Robert W. Young, specialist in Indian languages. This in turn has led to printing of Navajo newspaper, title of which means "Those things in the process of occurring" and to translation of booklet, "War With the Axis." The 300 copies of newspaper, which is translated by Willie Morgan, Navajo youth, and printed in Phoenix Indian school, are distributed to trading posts, missions and schools on the reservation. Special type was made by Mergenthaler company, adding one new letter and excluding F, P, Q, R and V. New letter uses L with slanting bar across the perpendicular, to represent the hissing sound by expelling air laterally with tip of tongue against roof of mouth without using voice box. Some of the letter sounds are varied with different accents and other signs, such as a small hook placed at bottom of A, to represent its nasal sound commonly referred to as a grunt.

Bighorn Sheep Increase . . .

QUARTZSITE — Bighorn sheep in Kofa game refuge south of here and in Cabeza Prieta game refuge are making amazing comeback according to Geo. Amundson, in charge Arizona fish and wild life service. Bighorns had been almost exterminated five years ago, when vast refuges in Pima and Yuma counties were established to protect them. Great numbers of lambs have been observed in every flock seen by Amundson.

Mexico Road Nears Completion . . .

NOGALES—International highway to Rocky Point, Sonora, Mexico, is scheduled for completion by January 1. Last links on American side are being rushed to completion. Paving on Mexican side is completed to railroad, one and a half miles from Gulf of California, where town of Punto Penasco is rapidly growing. Daily (except Sunday) train service to Point from Mexicali has been scheduled for several months. Commercial fishing season in Gulf began October 20. Deep-water harbor facilities are being developed, and plans are underway for bus service from southern Arizona to the Gulf.

Hospital Given Community . . .

TUCSON—Desert Sanatorium, valued at more than \$1,000,000 and world-known for scientific research and famous patients, has been made gift to this community by board of trustees for estate of its founder A. W. Erickson and his widow. Provision requires that operation shall be by non-profit corporation. Tucson Medical Center, Inc., now is in process of being formed. Mass meetings will be held for discussion of plans for hospital, repairs and expansions, and raising of \$250,000 as contingency operating fund.

Montezuma Monument Enlarged . . .

PRESCOTT—House of representatives passed amended bill (S378) for acquisition of about 180 acres Montezuma Well area as addition to Montezuma Castle national monument. Also added to monument were 80 acres of Coconino national forest land. Amendment limited to \$25,000 the amount to be appropriated for land.

Cactus Stolen From Park . . .

PHOENIX—Hundreds of rare cactus specimens have been stolen from Phoenix Botanical garden in 400-acre Papago park. Appeal to Arizonans to cooperate in preventing the vandalism is made by Gustav Starck, one of the founders of the project, and Mrs. Gertrude D. Webster, present Arizona Cactus and Native Flora society. Project is important state asset which when completed will be collection of flora from deserts of North and South America, Africa, Asia and Australia, growing in approximate natural surroundings.

Thomas E. Whitcraft, who succeeded White Mountain Smith in May, 1940, as superintendent Petrified Forest national monument, left in October to be inducted into army.

Neri F. Osborn, 87, territorial pioneer and father of Sidney P. Osborn, governor of Arizona, died in October of a heart ailment at his Phoenix home.

29

PALMS

INN

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P. O. BOX 278

INDIO, CALIF.

CALIFORNIA

Dad Fairbanks Dies . . .

BAKER—Death came to 86-year-old Ralph Jacobus ("Dad") Fairbanks October 3 at Nightingale sanitarium, Los Angeles. After a half century in wild Death Valley country, rescuing miners and travelers and gaining confidence of native Indians as have few white men, he had assumed an almost legendary status. Born in Utah of covered-wagon parentage, he first settled in Shoshone and afterward operated a resort-service station at what is now Baker. He was buried in Santa Paula beside his wife who had died in 1938. A few of the many colorful events of his life were told in DM, May, 1943.

Photos Verify Tall Tales . . .

BLYTHER—Alligator mystery of Colorado river has been solved after months of "tall tales" growing out of reports of huge reptile sighted along river in vicinity of Blythe. Late in October Martin and Ed Hoover, W. H. Russell and E. E. Crook, local ranchers, discovered the alligator asleep on a sandbar and killed it. It measured 10 feet, 3 inches and weighed estimated 500 pounds. Men took 26 pictures to prove their story. Explanation of its presence still is not cleared up. But 50 years ago, Santa Fe railroad in Needles had several alligators on exhibit, some of which might have escaped to river.

Salton Sea Beaches Planned . . .

NILAND—Plans are underway to develop two bathing beaches on shores of 45-mile-long Salton Sea for service men. At present only beach available is Gus Eilers' Palm Beach resort, visited by as many as 2000 men in a single day. Acceptance already has been made of \$107,836 bid of W. J. Disteli, Los Angeles, for construction of training swimming pool at Camp Dunlap, Marine corps base here, it was announced by 11th Naval District.

Mark Rose Quits District . . .

EL CENTRO—For first time since 1919 Mark Rose will not be candidate for director on Imperial Irrigation district board. Since 1901 he has been outstanding figure in development of Imperial Valley. He was among first to conceive and work for construction All-American canal and was member of first delegation sent to Washington to secure federal financing for project. It is reported retirement is due to his objections to recent purchase by district of California Electric power company for \$4,900,000, amount which he argued was excessive for system and outmoded equipment.

New Melon For Nation . . .

WESTMORLAND—Nation's cantaloupe consumers are due for treat in 1944, when newest and best melon will reach market. "Powdery Mildew Resistant Cantaloupe No. 5" was developed from powdery mildew resistant, inedible stock imported from India crossed with market melons susceptible to the mildew. No. 5 has disadvantages of tendency to "sugar crack," lack of uniformity in size and shape and later maturity than popular varieties, says farm advisor Beyschlag. Breeding is being continued to correct these defects.

Desert Museum Opened . . .

PALM SPRINGS—Desert Museum, featuring exhibits of desert plant and animal life, was opened to public for winter season in October. While Director Sam Hinton is on leave of absence at Torney General hospital here, management is under Mr. and Mrs. T. D. A. Cockerell, who are arranging special exhibits, motion picture programs and field trips for next seven months.

NEVADA

Pelican Island Ducks Dying . . .

FALLON—Many ducks in Pelican island area north of Stillwater are dying of botulism, probably deadliest poison known, according to Ray Alcorn who examined some of the dead birds. This is not the same type of botulism which attacks humans through tainted food but is technically Clostridium botulinum. On area of 30 acres Alcorn and Vernon L. Mills, state game warden, identified 550 dead birds. On one little island, 50 by 20 feet in size, 33 carcasses were found.

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—
Actually about 1½ cents per thousand readers.

MISCELLANEOUS

FOR SALE—12 beautiful perfect prehistoric Indian arrowheads, \$1; 10 tiny perfect translucent chalcedony bird arrowheads, \$1; 10 perfect arrowheads from 10 different states, \$1; perfect stone tomahawk, \$1; 4 perfect spearheads, \$1; 5 stone net sinkers, \$1; 10 perfect stemmed fish scalers, \$1; 7 stone line sinkers, \$1; 4 perfect agate bird arrows, \$1; 5 perfect flint drills, \$1; 7 perfect flint awls, \$1; 10 beautiful round head stunning arrowheads, \$1; 4 fine perfect saw edged arrowheads, \$1; 4 fine perfect flying bird arrowheads, \$1; 4 fine perfect drill-pointed arrowheads, \$1; 4 fine perfect queer shaped arrowheads, \$1; 4 rare perfect double notched above a barbed stem base arrowheads, \$1; 5 perfect double notched above a stemmed base arrowheads, \$1; 12 small perfect knife blades of flint, \$1; rare shaped ceremonial flint, \$1; 3 flint chisels, \$1; 7 quartz crystals from graves, \$1; 10 arrowheads of ten different materials including petrified wood, \$1. All of the above 23 offers for \$20. Locations given on all. 100 good grade assorted arrowheads, \$3.00 prepaid. 100 all perfect translucent chalcedony arrowheads in pinkish, red, creamy white, etc., at \$10.00. 100 very fine mixed arrowheads all perfect showy colors and including many rare shapes and types such as drill pointed, double notched, saw edged, queer shapes, etc., location and name of types given, \$25.00 prepaid. List of thousands of other items free. Caddo Trading Post, Glenwood, Arkansas.

FORTUNE: Complete File, unbound \$55.00 postpaid. ESQUIRE: Complete file, unbound \$40.00 postpaid. N. A. Kovach, 712 So. Hoover St., Los Angeles, Calif.

WANTED: Complete Lapidary Equipment. State what you have and price wanted. Write Box JE, Desert Magazine, El Centro, Calif.

25 Genuine Indian arrowheads, \$1.00; Tomahawk head, .50. Cat. of Indian relics, crystals and ore specimens. Geo. Holder, Glenwood, Ark.

MANUSCRIPTS MARKETING: Books, stories, plays, photoplays, articles. Write for Free Circular D-12. OTIS ADELBERT KLINE, Literary Agent, 507 Fifth Avenue, New York 17, New York.

FOR SALE—Year Round Resort Hotel and Cottages in excellent condition. 2 acres with family fruits. Hot water heat, Oil Burner. City water, finest in America. Completely furnished, kitchen modern. Paved road, right at city limits. Wonderful view of Columbia river and mountains. Old established business and needs younger owner. Plenty business right now. Price \$13,500. Address R. E. & Tom Scott, Hood River, Oregon.

FAIRY FLAMES PINE CONES—Amazing and bewitching fireside enchantment. Fairyland colors of orchid, cobalt blue, apple green, turquoise. 15 to 20 chemically treated, extremely long burning pine cones, \$1.00 postpaid California, Arizona, Nevada. \$1.10 elsewhere. (Cash or money order.) FAIRY FLAMES, 1104 So. Monterey St., Alhambra, Calif.

Beautiful hand carved lifelike burros in hardwood. \$7.00 to \$20.00. Photo on request. Grail Fuller, 1336 16th St., Santa Monica, Calif.

LIVESTOCK

KARAKULS producers of Persian Lamb fur are easy to raise and adapted to the desert which is their native home. For further information write Addis Kelley, 4637 E. 52 Place, Maywood, California.

"Karakul Fur Sheep—America's Great Livestock Opportunity—You can be a part of this fascinating business and have your Karakuls cared for in California, by experienced ranchers. Write for details, James Yoakam, National Distributor, 1128 No. Hill Ave., Pasadena, California."

REAL ESTATE

Butte County, California, \$250 acre. 160 acres beautiful meadow land, many large oaks and pines; trout stream running length of property. Carries valuable mineral rights. Located on county road within 20 minutes of Oroville. Address owner: 1780 Warwick Rd., San Marino, Calif.

For Imperial Valley Farms —

W. E. HANCOCK

"The Farm Land Man"

Since 1914

EL CENTRO — — — CALIFORNIA

Promotion for Guy Edwards . . .

BOULDER CITY—Guy D. Edwards, who was superintendent of Boulder Dam recreational area for several years and has been serving as captain in army engineers corps since May, 1942, has been given temporary promotion to major, according to announcement from Washington, D. C. He was transferred to Pacific northwest several months ago.

Nevada Alloted More Water . . .

CARSON CITY—Nevada in October was granted right to withdraw additional 200,000 acre feet of water from Lake Mead, Boulder dam reservoir. In announcing approval of state contract, A. M. Smith, state engineer, said amount would entitle state to total of 300,000 acre feet.

Deerskins for Alaska Gloves . . .

WINNEMUCCA—Deerskins donated by Humboldt county residents and shipped to San Francisco tannery will be made into gloves or aviation jackets for soldiers in Alaskan area. Latest shipment of 75 skins is said to be one of largest single consignments from any one county in western states.

New postoffice at Henderson, Basic Magnesium, Inc. town, will be ready for business about December 1.

NEW MEXICO

Silver Arrives for Jewelry . . .

GALLUP—More than a ton of silver metal, valued at \$24,000, arrived here in October from New York City. M. L. Woodard, secretary United Indian Traders association now has job of distributing silver to Indian traders for silversmith work. Although coin silver always has been favored by native workers, there is slight difference between it and sterling. Sterling is 92½ per cent silver, coin silver 90 per cent due to addition of hardening alloy.

Wolf Hunter Retiring . . .

ALBUQUERQUE—James A. Young, professional hunter for U. S. fish and wildlife service, is retiring after 24 years hunting predatory animals in New Mexico. His bag of 3669 coyotes is believed to be a record. He also accounted for 37 wolves, four mountain lions and 514 bobcats.

Teacher Shortage Acute . . .

SANTA FE—Teacher shortage is major problem of New Mexico educational association, according to executive secretary R. J. Mullins. Recent survey revealed over 25 per cent turnover of teachers last term, compared with normal seven per cent. Mullins declared, "All available qualified married women and retired teachers have been called back into service, and many schools have been able to keep classes going only by employing wives of army officers who are temporarily in the town."

Arabians Learn Navajo Methods . . .

ALBUQUERQUE—Royal party of Prince Faisal and Prince Khalid, sons of King Aziz Ibn Saud of Saudi Arabia, were conducted on inspection tour of New Mexico and Arizona sheep raising areas during recent continental trip. They are particularly interested in American methods of sheep breeding and wool weaving. They were given demonstrations of wool shearing, scouring, carding, spinning and weaving. Most such operations in Arabia are still in primitive state.

Navajo's Letter Puzzles Censors . . .

CRYSTAL—Pvt. William Peshlakai, Navajo with armed forces in Southwest Pacific, mailed a letter to his father Andrew Peshlakai last April. It was delivered in October after a tour which included Australian censors, Smithsonian Institution in Washington and Navajo agency at Window Rock, Arizona. Written in Navajo language, it had the censors and Smithsonian experts baffled. Indian service officials censored the letter and forwarded it to the father.

Shalako Ceremony Date Set . . .

ZUNI—Annual Shalako, dramatic "house-blessing" ceremony of Zuni Indians, will be held this year December 10. Zunis will hold open house and welcome both white and Indian visitors. Masked dancers representing the gods will arrive in village at sunset and ceremonies will last through the night.

Navajo Silversmiths in Alaska . . .

GALLUP—Navajo Indians serving in armed forces in Alaska have requested silversmithing equipment be sent them so spare time may be devoted to this craft. Chamber of commerce is attempting to supply them. Introduction of silversmithing in Alaska suggests interesting possibilities as ethnologists believe Navajo and Eskimos are of common Mongolian origin.

Desert Engineers in Italy . . .

SOCORRO—Two New Mexico officers are in army engineer detachment building highway in Italy which has been considered an impossible job for centuries. They are Maj. James O. Gibbons, Socorro, commander of detachment, and Capt. A. T. Chavez, Albuquerque. Road, designated Highway 36, has defied engineers since Roman empire days. Maj. Gibbons, when given the job, walked up the mountainside, told his men to "put her there"—and the men are carrying out his orders.

William Penhallow Henderson, 66, Santa Fe artist and architect, died of heart attack October 15. He and his wife, Alice Corbin Henderson, the poet, were the first Anglo residents along the street which they named Camino del Monte Sol.

UTAH

Christmas Trees Limited . . .

LOGAN—Few Christmas trees will be available to general public, but Cache national forest according to supervisor James O. Stewart will supply a limited number to churches, hospitals and schools in northern Utah and southern Idaho. No commercial cutting permits have been issued for several years.

Population Soars . . .

SALT LAKE CITY—Salt Lake metropolitan area (Salt Lake county) is now estimated to have more than 275,000 population, says Gus. P. Backman, executive secretary chamber of commerce. Figure represents 40,000 increase since 1940.

OPA Helps Wood Cutters . . .

LOGAN—Intelligent cutting of trees can help allay threat of coal shortage in Utah this winter say specialists of agricultural extension service. State, forest service and grazing service officers will cooperate with persons wanting to cut deadwood from public lands. Office of price administration it is declared is cooperating in supplying gasoline for fuel-cutting trips.

Indians Win Retrial . . .

SALT LAKE CITY—Second degree murder conviction of two Navajo Indians was reversed October 23 by state supreme court because of errors in lower court proceedings, and case was remanded to district court of San Juan county for new trial. The Indians, Jack Crank and John Chief, both of northern Arizona, were arrested in 1941 presumably for violation of Taylor grazing act, as they roamed at will across Utah-Arizona border. While in jail they assertedly confessed to murder some 10 years before of white prospector whose name was unknown. They were then charged and convicted of second degree murder, after which appeal was made to state supreme court.

A WESTERN THRILL

"Courage," a remarkable oil painting 20x60 feet, the Covered Wagon Train crossing the desert in '68. Over a year in painting. On display (free) at Knott's Berry Place where the Boysenberry was introduced to the world and famous for fried chicken dinners with luscious Boysenberry pie.

You'll want (1) A 4-color picture of this huge painting suitable for framing. (2) A 36-page handsomely illustrated souvenir, pictures and original drawings, of Ghost Town Village and story of this roadside stand which grew to a \$600,000 annual business. (3) Two years subscription (12 numbers) to our illustrated bi-monthly magazine of the West. True tales of the days of gold, achievements of westerners today and courageous thoughts for days to come. Mention this paper and enclose one dollar for all three and get authentic western facts. Postpaid. GHOST TOWN NEWS, BUENA PARK, CALIF.

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Covington Lapidary Engineering Co.
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ROCKHOUNDS . . .

We have a large stock of Cabinet specimens, Gem material, Cut stones, Mineral books. We want to buy good gem material and specimens. Come and see us and join our Rockhound Colony.

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JOHN W. HILTON, Owner

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AMATEUR GEM CUTTER

and polishing equipment. Lelande Quick, who conducts this department, is former president of the Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, California.

By LELANDE QUICK

As I have visited lapidaries through the years I have been almost as much interested in the various methods of displaying gems as I have in the gems themselves. I have seen few good methods and I have seen many poor ones. I find that too many amateur lapidaries have given little or no thought to displaying their treasures with safety or convenience or showing them to the best advantage.

To encourage the proper display of gem specimens the Los Angeles lapidary society always has given a certain percentage in judging at their shows for what they call "showmanship" which is another term for the proper and tasteful view of the lapidary art. Many lapidaries are also "handy men" and can build their own display cabinets. Many others have friends who are cabinet makers with an understanding of the problems involved. However most of us have to depend on salvaged boxes and makeshift materials for gem housing.

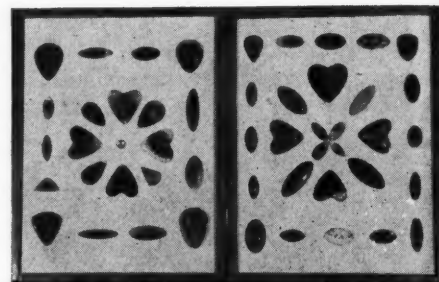
About the only commercial display cases available everywhere are the Riker specimen mounts which can be bought through any scientific or laboratory supply house. These mounts, intended for butterflies, beetles, etc., are black-bound cases filled with medicated cotton to preserve the specimens and they have a removable glass lid. They come in many sizes and are very satisfactory for displaying gems. Because of the medicated cotton, which sometimes gives a film to the stone, it is wise to remove it and replace it with unmedicated cotton which can be purchased in large rolls at drug stores. These mounts are readily portable.

For a time I had a fine portable case divided into 144 equal size squares in which I carried my stones. I discarded this scheme as unsatisfactory when I found that I was cutting all cabochons to a size to fit the case rather than cutting them to fit the material at hand. A cabinet of drawers is fine but it has the disadvantage of being stationary and it seldom is a tasteful piece of furniture. Like all chests of drawers it usually dominates a room without adding to the decor.

William J. Kane of San Francisco has solved the problem of housing his gems in such a way that they can be put away and yet be hauled about when the occasion warrants. His case, illustrated on the right, allows the lapidary to arrange the cabochons to the best advantage, to use a variety of shapes and sizes and to avoid a stodgy museum effect. He offers the following explanation:

"My cases are 12 x 15 inches, hinged in pairs so that they fold together like a book. They are light weight, portable and display my gems to the best advantage. The bottom of the cases are Masonite 1/8 inch thick. Small sections of this material usually can be bought from secondhand building supply dealers, or plywood of the same thickness can be substituted but this is heavier. The sides of the cases are 1/2 inch wide strips of any hard wood. If you have no power tools get the dealer to saw the materials to size. The bottoms of the cases are lined with standard picture framing cardboard. The cream colored stippled cardboard is the most effective. I glue the stones to the cardboard with Du Pont's Duco cement which I have found is the most satisfactory glue for the purpose. I enamel the outside of my cases."

This is a splendid idea and I am going to try it myself. I think the cases could be more effective, however, if the cardboard was covered with cloth. For instance black silk certainly would enhance a case of opals, monk's cloth



would be fine for woods and jaspers, blue silk for moonstones and agates, white or yellow silk for agenic gems, etc.

The problem of showing one's gems is solved by this arrangement too for you can show one kind of material at a time and the case can be held conveniently on one's lap or set before him on a table with good light for a thorough inspection. They are safe from filching (certainly people do that—I lost one of four matched rubies and an opal that way) and yet they are not viewed through a glass which always detracts from the beauty of a gem. To get the full beauty of transparent stones I have seen a similar case in which the stones were glued to glass Moore push pins and the pins set in the case to suit the fancy. This permits ready interchange of gems. Has someone else good ideas on this subject?

• • •

Amateur lapidaries naturally gravitate in many instances to metal work for the creation of settings for their gems. Just as they do not cut the expensive gems because of the expense and the fear of bungling they do not work in gold and platinum for the same reasons. But I often have wondered why their efforts are confined to silver when copper is available bearing present priorities in mind, of course.

For many stones copper would make a more attractive setting. I saw a lady the other day wearing a belt with an intricate copper buckle set with turquoise that was far more entrancing than any so-called "Indian jewelry" of silver and turquoise that I have ever seen. I think a well balanced copper ring with lapis lazuli would be unusually attractive. Has any reader had much experience with copper jewelry?

• • •

DID YOU KNOW . . .

- The pearl is a form of aragonite (carbonate of lime).
- Green, yellow and blue pearls come from the gulf of California, black pearls from the gulf of Mexico and pink pearls from Florida waters.
- Black pearls often are imitations made of small polished spheres of hematite.
- The diamond is the only gem that does not produce a "Beilby layer" which is a minutely shallow amorphous flow layer formed when a gem is polished.
- Amber may be stained any color.
- The index of refraction of the diamond and zircon cannot be measured on a normal refractometer. It must be measured on a spectrometer by the method of minimum deviation.

THE DESERT MAGAZINE

GEMS AND MINERALS

ARTHUR L. EATON, Editor

ARTHUR FLAGG, PHOENIX, AGAIN ROCKY MOUNTAIN PRESIDENT

Junius J. Hayes, president of the Mineralogical Society of Utah, reports that Arthur L. Flagg, Phoenix, Arizona, was chosen to succeed himself as president of Rocky Mountain federation of mineral societies. President Flagg under powers granted by the constitution, filled vacancies in other offices: Arthur L. Flagg, Phoenix, president; Mrs. Charles W. Lockerbie, Salt Lake City, Utah, vice-president; Humphrey S. Keithley, Phoenix, secretary-treasurer.

Due to war conditions the Rocky Mountain federation was unable to hold a convention this year.

SCARCITY OF LARGE QUARTZ CRYSTALS IS EXPLAINED

Careful study shows that the scarcity of large, perfect quartz crystals in Herkimer county, New York, as well as in many other places, is due to the presence of many small water cavities. Examination of numerous crystals and parts of crystals has disclosed that water in the small cavities has frozen, expanded, and either forced large flaws or broken the crystal to pieces. When water freezes, it increases in size only about 1/7 over its original volume, but pressure on the surrounding rock is more than 2000 pounds per square inch. This is an essential, natural process in breaking up and weathering hard rocks into soil for man's use.

PHOENIX GROUP STARTS NEW SEASON OCTOBER 7

Officers for 1943-44 season of Mineralogical Society of Arizona are Arthur L. Flagg, president; Luther Steward, vice-president; Dr. George G. McKhann, secretary; H. B. Holloway, treasurer; Humphrey S. Keithley, membership; Luther Steward, program; Scott Norviel, nominating.

First meeting of the season was October 7 at the regular meeting place, Arizona Museum, West Van Buren St. at 10th Ave., Phoenix. Scheduled meetings are first and third Thursdays, and the public is cordially invited. A course in determinative mineralogy will be the principal subject for future meetings. Those interested are welcome to attend these meetings. There are now 48 adult and eight junior members on the roster.

LUSTER TYPES DEFINED

Metallic—The luster of metals (lead, tin, gold, platinum).

Non Metallic—All luster not like metal.

Adamantine—Like a diamond, sapphire, etc.

Vitreous—Like the edge of broken glass (quartz).

Waxy—Like wax (opal, amber).

Greasy—Like oil or grease (graphite).

Pearly—Like pearl or mother of pearl.

Silky—Like silk (asbestos, tiger eye, or other fibrous substances).

WASHINGTON, D. C., CLUB HAS ACTIVE PROGRAM

Mineralogical Society of the District of Columbia is not only actively campaigning for new members but has a constructive program for increasing interest in field of mineralogy among its present members. Windsor B. W. Stroup, chairman of the membership committee, is stimulating such interest by encouraging (1) regular reading of mineral literature; (2) specialized activities such as cutting and polishing, fluorescence and luminescence, identification, meteors; (3) fostering junior society as a "future feeder."

Current officers are C. H. Robinson, president; F. W. Horton, vice-president; French Morgan, secretary; W. B. Stroup, treasurer-membership. Monthly meetings are held at U. S. National museum, Rm. 43, Natural History building, 10th and Constitution Av., N. W., Washington, D. C., except July, August and September when field trips are sponsored.

SOUTHWEST MINERALS STUDY RELEASED BY L. A. CHAMBER

Complete war minerals survey of Southwest is available in "War Minerals-Metals" published by domestic trade department of Los Angeles county chamber of commerce under direction of G. A. Joslin. Study covers production, marketing and governmental aids to mining industry.

Strategic minerals covered in report include aluminum, antimony, chromium, copper, iron ore, lead, magnesium, manganese, mercury, tungsten, zinc. Aids to miners are in such sections as: state aid to miners in California, Arizona and Nevada, Metals Reserve company, purchase depots and stockpiles, priority information, purchases of strategic minerals in Mexico.

MAGNESIUM PROCESS DISPLAY BOARD AT NEVADA MUSEUM

Mrs. Percy Train, curator of Nevada state museum, has succeeded in having a magnesium process display board placed on exhibit in the mineral room of Nevada state museum, Carson City. The chart shows by means of glass vials filled with various concentrates, chlorides and acids the processes necessary to produce pure magnesium from raw ore.

F. O. Case, general manager of Basic Magnesium, Inc., gave the chart to the museum. Another exhibit is a full size magnesium "cheese," nine inches high, 12 inches in diameter, which was cast from the initial run made at Las Vegas August 31, 1942.

The question again has been asked: What are the soft, acicular masses of crystals found in geodes in the black buttes of northeastern Imperial county, California? In the amygdoloidal basalts in these mountains several zeolites have been found. There is some natrolite but most of the whitish or pinkish cottony substance is probably mesolite, associated with other zeolites.

COLORFUL MINERALS

WAVELLITE

Wavellite which was named for the father of Field Marshal Wavell is of particular interest to all at the present time. In several places in Pennsylvania and Arkansas fine specimens are found. It occurs as single round balls or groups of spheres. When opened, the interior structure is found to be perfectly radiated. The color varies from white to yellow, green or brown, with brilliant vitreous luster. When several spheres in a group are opened so as to show the radiating structure and colors it makes a very striking exhibit.

NEGATIVE QUARTZ CRYSTALS FOUND IN MOABI PEAK AREA

Among crystals of quartz brought recently from the Moabi Peak region of San Bernardino county, California, were some groups containing "negative" crystals. Negative crystals are due to the manner of growth of quartz crystals. One crystal forms outside or over another. If the inner crystal becomes loose and drops out it leaves a hollow crystal, the inside being exactly the shape of the missing crystal.

Gift Suggestions...

We have made extensive preparations in making it easier for you to select your Christmas gifts. Our stock is brimful of appropriate gift items.

PYRITE from Utah. Just received a new lot. The most beautiful we have had. These are in either individual crystals or showy crystallized specimens.

Prices ranging at 25c, 50c, \$1, \$1.50, \$2, \$2.50, \$3.50, \$5.00.

Several large specimen pieces at \$10, \$15 and \$25

TOURMALINE CRYSTALS — Mesa Grande, Calif. Seven crystals nicely arranged in a glass topped gem display case at

\$1.00, \$2.00, \$3.00 and \$5.00

The \$3.00 and \$5.00 grades contain crystals with good terminations.

Special Christmas Gift Offer

Two large sized Polished Oregon Agate Nodules (\$2.00 value).....\$1.00

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THE ART OF GEM CUTTING, complete second edition, Fred S. Young, gem-mologist. Contains information on cabochon cutting, facet cutting, methods to test stones, the value of gem stones and useful lapidary notes. Index. 112 pages. ... \$1.50

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THE *Desert* MAGAZINE
El Centro, California

THE DESERT MAGAZINE

AMONG THE ROCK HUNTERS

Orsino C. Smith gave an illustrated talk on simplified mineral analysis at November 12 meeting of Pacific mineral society held at Hershey Arms hotel, 2600 Wilshire Blvd., Los Angeles. Smith is refinery superintendent for Richfield oil company.

Lloyd E. Richardson, Holtville, was elected third-time president of Imperial Valley gem and mineral society; Charles G. Halliday, Holtville, vice-president; Mary Jane Neal, El Centro, secretary; Arthur L. Eaton, advisor. Pot (point) luck supper and swap game entertained members November 6 at home of Mr. and Mrs. N. Conner, Holtville.

Mr. and Mrs. Ed Matteson, Phoenix, were honored with a surprise party August 26 by members of Mineralogical Society of Arizona. Mattesons have moved to Brea, California. When Matteson removed his mineral display from the Phoenix chamber of commerce window, the space was allotted to Mineralogical Society of Arizona for their displays.

Orange Belt mineralogical society discussed quartz minerals at October 7 meeting held in San Bernardino junior college. E. C. Cline spoke on opal, Howard Fletcher on geodes, I. V. Graham on palm wood and D. H. Clark on iris. Twenty-eight members attended.

Roy Milligan of Pacific mineral society, Los Angeles, surmises that Los Angeles may stage a world fair after the war is won and that California federated mineral groups should begin to look forward to staging a comprehensive and complete show of California minerals. Pacific mineral society wishes to go on record as sponsoring the idea.

Midwest federation of geological societies held their third annual convention at Chicago, October 2. Marquette geologists' association of Chicago was host. The Midwest federation consists of three groups: Marquette geologists, Wisconsin Geological Society of Milwaukee, and the Joliet mineralogists.

Los Angeles Lapidary society voted Oct. 4 to increase membership to 200, double the dues, and make it mandatory for each active member to exhibit at least five new specimens of work each year and to attend at least one meeting and one field trip yearly to maintain active membership.

Recently Mineralogical Society of Arizona welcomed 12 new members. Among those coming from other cities are: E. S. Emmerson, San Bernardino, Calif.; Dr. Truman H. Kuhn, Golden, Colo.; Esker Mayberry, Bisbee, Arizona; Dr. Stuart A. Northrup, Albuquerque, N. M.

East Bay mineral society, Oakland, California, enjoyed a picnic and auction October 24 at Tilden Park caves picnic grounds. Members contributed specimens for the auction. Proceeds were donated to a service organization.

Long Beach mineral society held its regular meeting October 2 at Nine Hole clubhouse. Mineralight company sent a speaker to the meeting to demonstrate various lights.

Sequoia mineral society, Parlier, Calif., opened the fall sessions with a rock sale. Members furnished the specimens.

Due either to war conditions or (more likely) to crass carelessness, Louise Eaton has lost her little brown book containing names and addresses of officers of all mineral societies with whom Desert corresponds. She will be grateful if secretaries will send names and addresses of officers and time and place of meeting to Mrs. A. L. Eaton, Box 353, Holtville, California.

Fred Stein, Mineralogical Society of Arizona, states that the finest Hungarian opals come from Marmaros in the Nagy Banya district about 200 miles from Czernowitz which is the center where the opals are cut and sold.

Recently elected officers of San Diego mineralogical society are John Dyson, president; R. D. Alexander, vice-president; Hazel M. Wedgewood, secretary; R. D. Rowland, treasurer; C. A. Scott, Dr. Paul E. Wedgewood and Chas. Ingles, directors.

Selma, California, lapidary class now meets twice a week, Mondays and Wednesdays.

Searles Lake mineral news states that Belair shipyard plans to use names of minerals for 26 reinforced concrete barges being constructed for the Maritime commission. First completed will be called the Agate. Others will be named Chromite, Flint, Granite, Graphite, Gypsum, Mica, Onyx, Quartz, Silica and Slate.

Henri Withington, instructor of Trona mineralogy class, has gone to Mexico on vacation. Classes will not be held until further notice.

Rudolph von Hueve lectured on action of various grinding and polishing agents on gem materials at October 4 meeting of Los Angeles lapidary society. Von Hueve, staff member of California institute of technology, used several high power microscopes to illustrate his talk.

Lawrence Roe discussed lead and zinc mining in the middle western states at October 20 meeting of Searles Lake gem and mineral society. Second annual hobby show was held October 16-17 in Trona unified school. Restoration of Indian Joe's continues. Harvest yielded approximately two tons figs, 1½ tons grapes, 14 bushels apples and ten bushels of pears. The group enjoyed a field trip October 31 to Chris Wick's in the Panamints and thence to Panamint city.

Bill Trickett, charter member Sequoia mineral society, on furlough from South Pacific, displayed some of his over-seas souvenirs at the September meeting.

Fred W. Cassirer, mineral dealer from Czechoslovakia, spoke on noted collections in Europe and gave anecdotes of his travels at the October 5 meeting of New Jersey mineral society, Plainfield, N. J.

Professor W. Ellis Shuler, geology professor at S. M. U., lectured on crystallization at November 9 meeting of Texas mineral society, Dallas, held on the mezzanine floor of Baker hotel. Members furnished specimens for an impromptu mineral show.

Professor Charles L. Camp, V. C., gave an illustrated talk on adventures in the painted desert at October 7 meeting of East Bay mineral society, Oakland. Orlin J. Bell spoke on reading the story of the Book of Rocks at the October 21 meeting. East Bay bulletin is now supplemented by a news sheet called the Rockpile.

Dr. Alfred Livingston of Los Angeles city college talked on our vanishing beaches at October 8 meeting of Pacific mineral society, Los Angeles.

Cogitations . . .

Of a Rockhound
By LOUISE EATON

On account uv no fieldtrippin' rockhouns is gettin' sorta bleached out 'n pale so they can scarcely be distinguished from peepul. If they don't take to victry gardenin' 'r sun bathin' they'll pritty soon hafta eat vitimun pills cause uv lack uv enuf sunshine. To say nuthin bout what happens to figgers when folkes omits exercizin.

No two 'r more rockhouns can get together f'r eny length uv time 'n not begin to moan 'n talk over past field trips 'n plan future wuns.

Kind uv substitoot fieldtrippin is to sort over rox on hand, carry um around 'n label um. If yu moves enuf rox 'n stoops offen enuf, 'n lifts heavy boxes aroun, yu can get good twinges in the fieldtrippin muscles.

Therz wun nice thing about short winter days: yu can enjoy th' splendor uv sunrize with no extry effort uv wakin' up early. Most folkes has to be up 'n busy before December sunup — especially when we use war time 'stead of God's.

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By RANDALL HENDERSON

WITH THE ALLIED FORCES IN AFRICA — My present station is in an important city on the northern coast of Africa. From my third story billet in a French rooming house I watch the sun come up over the blue-green waters of the Mediterranean. Just over the coastal range to the south is the Sahara.

From the air, this French-owned coastal region reminds me of California. Below is an orderly checkerboard of vineyards and orchards and citrus groves, with well-kept farm houses surrounded with gardens and flowers. Where the terrain is too steep or arid for farming, the rolling brown hills are sprinkled with trees that might be California oaks. The fruits and flowers are all familiar—oranges, figs, grapes, lemons and peaches—oleanders, bougainvillea, geranium and hibiscus.

Here we are literally between the desert and the deep blue sea. And we are quite conscious of both of them. The panorama of a beautiful harbor spreads out before us constantly. We cannot see the desert, but every few days during summer and early fall a hot blast rolls over the hills to remind us that the Sahara is not far away. The sirocco, as the natives call this desert wind, continues for a few days and then the cooling breeze from the Mediterranean gains supremacy again. But it is never uncomfortably warm for us desert folks—I mean the Arabs who occupy the native quarter, and myself.

* * *

Here the veiled women and the turbaned men of the Near East mingle in narrow crowded streets with the uniforms of the armies and navies of all the United Nations. Americans, British and French predominate, but there are also Canadians, South Africans, Australians, Norwegians, Greeks, Dutch, Danes, Poles, Yugoslavs, and the blacks and whites and browns of the African colonies. Then of course we have the WACS and the women of the British and French auxiliaries. I long ago gave up being able to identify the different kinds of uniforms and insignia. It is enough to know that they are all on our side.

* * *

Once a week the American Red Cross here holds a Town Hall meeting, at which guest speakers discuss interesting phases of civilian life and affairs in this and other war theaters. Quentin Reynolds of Colliers spoke at one of these meetings recently. He told us the war correspondents had taken a poll and decided among themselves that the three outstanding discoveries of the present war are (1) The Jeep, (2) Ernie Pyle, (3) The Red Cross. Those who have read Pyle's intensely human newspaper stories from the front will understand this selection. Americans at home perhaps do not realize the fine job the Red Cross is doing here and on other war fronts in the matter of service and entertainment for the soldiers.

The ARC provides club rooms, picture shows, reading and writing lounges, snack bars, information bureaus, shower rooms, radio programs—and if a soldier misses the last bus to camp at

night they'll supply a ride in the emergency. Overseas soldiers in Africa always will have a kindly feeling for the Red Cross, and I presume it is the same in other theaters.

* * *

At another Town Hall session the speaker discussed the life and customs of the Arab population in this part of the world. Most of them are Moslems, and since their bible, the Koran, places much emphasis on cleanliness, one of the questions asked the speaker was: "Why do the Arabs have such a complete disregard for soap and water?" The answer was: "You know soap is very scarce in this part of the world, and besides, not many Arabs can read their Koran."

Out on the great American desert we have always had to forego the luxury of chocolate bars in summertime. The chocolate melts. But the problem has now been solved. One of the most popular items in the overseas Post Exchange is Hershey's Tropical Bar. It never weakens, however high the temperature. A similar chocolate bar is issued for emergency use as field rations to soldiers. It is one item of confection which I hope will be available for desert dwellers in USA after the war is over. It is good food for hikers, and a chocolate candy that will never melt.

To the American soldier here it appears that as soon as an Arab youngster is old enough to walk, he gets a little box and a brush and becomes a shoe-shine. The streets swarm with them. They are good-natured little pests. Also, they are very persistent, but always stop just short of actual rudeness. They've learned a little English and their sales talk goes as follows: "Shine? . . . 'Merican polish! Veree good!" Generally they do an atrocious job of shining, but it costs only a franc or two, and their good humor is so infectious that no one ever complains.

* * *

A letter from Marshal South brings word that he and Tanya and the little Souths are on their way back to Yaquitepec. I am sure that other Desert Magazine readers will share my pleasure at this news. They will never find another home that means as much to them as the little cabin they built with their own hands on Ghost mountain.

The Souths personify that element in the human family which puts independence above security. The soldier who volunteered immediately after Pearl Harbor is in the same classification. If the time ever comes when a preponderant number of humans in this civilized world value their security more highly than their liberty—then the world will go back to barbarism.

The folly of those 25 years between World War I and World War II was that too many Americans valued their security more highly than their freedom. We nearly lost both, before the Japanese jarred us out of our smug complacency.

We like and admire the Souths because we know instinctively that theirs is the kind of faith and courage that will keep freedom alive in this world.



Just Between You and Me

By RAND HENDERSON, U.S.M.C.

SOMEWHERE IN THE SOUTHWEST PACIFIC—"Their youthful faces and idle chatter belied the fact that they were the toughest and most ruthless land combat troops in the world." So wrote a correspondent of the Christian Science Monitor referring to the Marines who spearheaded the attack against New Georgia island. The Marines get a kick out of reading items like that. It's one of the factors that keeps morale high and good humor prevalent. They feel proud that their fighting ability is being recognized even if it be in the light of notoriety.

But too much of that type of praise is apt to have an opposite effect on wives, mothers, sisters and sweethearts at home. These men aren't tough so much as they are well-conditioned and trained. They aren't "ruthless" so much as they are well-disciplined and ably led. They are essentially the same fellows who left home one or two or three years ago, and they long to return to those homes just as men in uniform around the world do. If they fight ruthlessly, it's because they know that the sooner they kill more Japs the sooner they can return to those they love.

* * *

At present our outfit is not on active combat duty. Our schedule is full, but for the most part not rigorous. We pass leisure hours doing the same thing as men in service around the world—writing letters, movie-going, gaming, reminiscing, dreaming of home, and just "shooting the bull."

Men living together, under conditions of weather and discipline not always favorable, are subject to a strain on nerves and self-control, but on the whole general unity and optimism are dominant. We all have found that the prime secret of contentment over here, as the world around, lies in maintaining a cheerful outlook and a bubbling sense of humor.

One argument that prevails wherever men assemble is over the relative merits of "back home where I come from." I naturally uphold the desert Southwest, but often I feel like a missionary in a strange land, who understands neither the language nor the customs of the people he is trying to convert. Take a fellow from green, lake-dotted, forested Upper Michigan, to whom water scarcity is nothing but a storybook situation to be overcome by the hero—and make him feel the joy and gratitude that fills a desert rat when he stumbles across a palm-fringed water hole. He will listen politely, but obviously he'd rather be reading the storybook . . . But I'll keep trying.

* * *

Ingenuity and aggressiveness are two outstanding traits with which Allied and Axis commanders alike credit American fighting men. These qualities extend beyond their fighting methods and into their manner of speech. With typical Yankee disregard for tradition and the past masters, our men have undertaken to improve on Webster, and I'm not the one to say they haven't done a good job. Three interesting words which have been cre-

ated to speed up conversation are "gizmo," "snafu," and "guk" or "gook."

The spelling of this last word baffles me. I don't remember ever having seen it written, and a poll among my friends shows opinion evenly divided as to "gook" and "guk." Anyhow, the word never was created to embellish literature, so I'll use the simplest spelling. GUK—Of or pertaining to anything native of a foreign island or country, including the inhabitants thereof. "Guk" money, "guk" food, "guk" clothes, "guk" children—in fact, anything not Yankee is classified as "guk." And, among fellows who have been out of the States many months, anything American is facetiously referred to as "guk."

"Gizmo" is an all-inclusive substitute for any object for which the speaker can't remember the name. A "gizmo" may be anything from the name of an old girl-friend to a flavor in an ice-cream soda. As a substitute in the nomenclature of a rifle or field-piece it can't be beat. However, a private whom I overheard receiving a first-class tongue-lashing from an old-time sergeant for using the word during a test, probably won't agree with me on that.

"Snafu" is the abbreviation of five good English words—Situation Normal, All Fouled Up. When orders come through to pack up and prepare for marching orders, only to be cancelled after feverish activity has enabled the men to get ready in time, then up goes the cry, "SNAFU!" And it generally helps to restore good humor in the ranks.

* * *

If the resolutions I hear fellows make are held to, the universities of the country will be well-filled after this war. Travelling, seeing different races of people, different customs, different habits, is arousing a new curiosity and interest among these fellows. Also, in this age of mechanical and technical warfare, thousands of young fellows are getting training and education in new fields to which they never would have been exposed in civilian life.

Many of them want to go on and learn more about engineering, accounting, radio, languages, and a multitude of other subjects which they have been taught a little about in the service. Of course, the greater number will have to support themselves and perhaps families. But they will find a way to advance their learning . . . Correspondence and night schools will do well to expand their facilities in anticipation of a great post-war demand for higher education.

* * *

As I write I can look out the open flaps of the tent at the glowing disc of a full moon, and it brings the desert close to this distant land. The old familiar silhouettes of cholla and ocotillo and greasewood are replaced by a less distinctive and varied type of vegetation, but the Old Man up there is still the smiling old gent who used to sit in on our campfires in desert washes and oases. Soon he'll be looking at those old familiar places—and I envy him.

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